

MANUFACTURERS' RECORD

A WEEKLY REVIEW OF THE IRON, STEEL, METAL & HARDWARE TRADES.

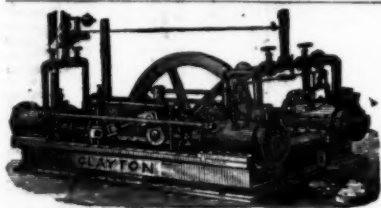
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BALTIMORE, OCTOBER 4, 1884.

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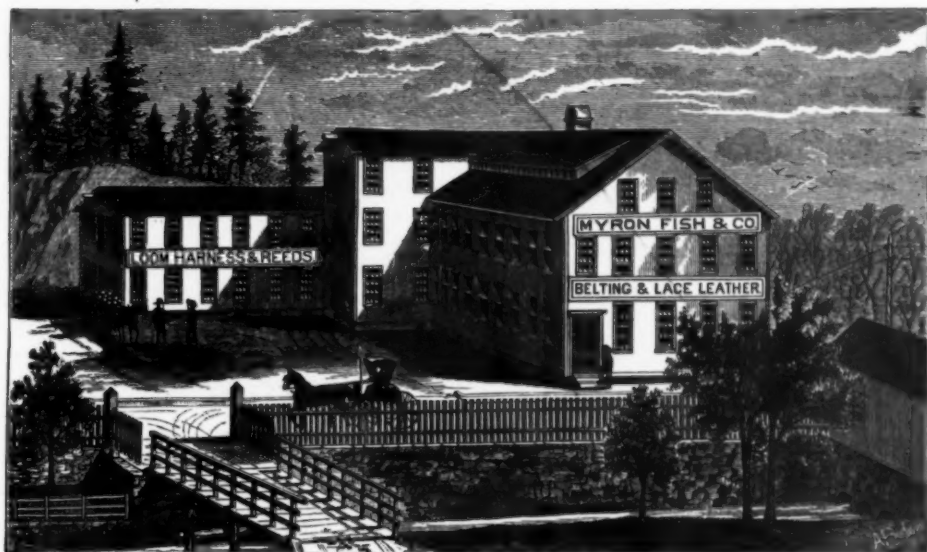
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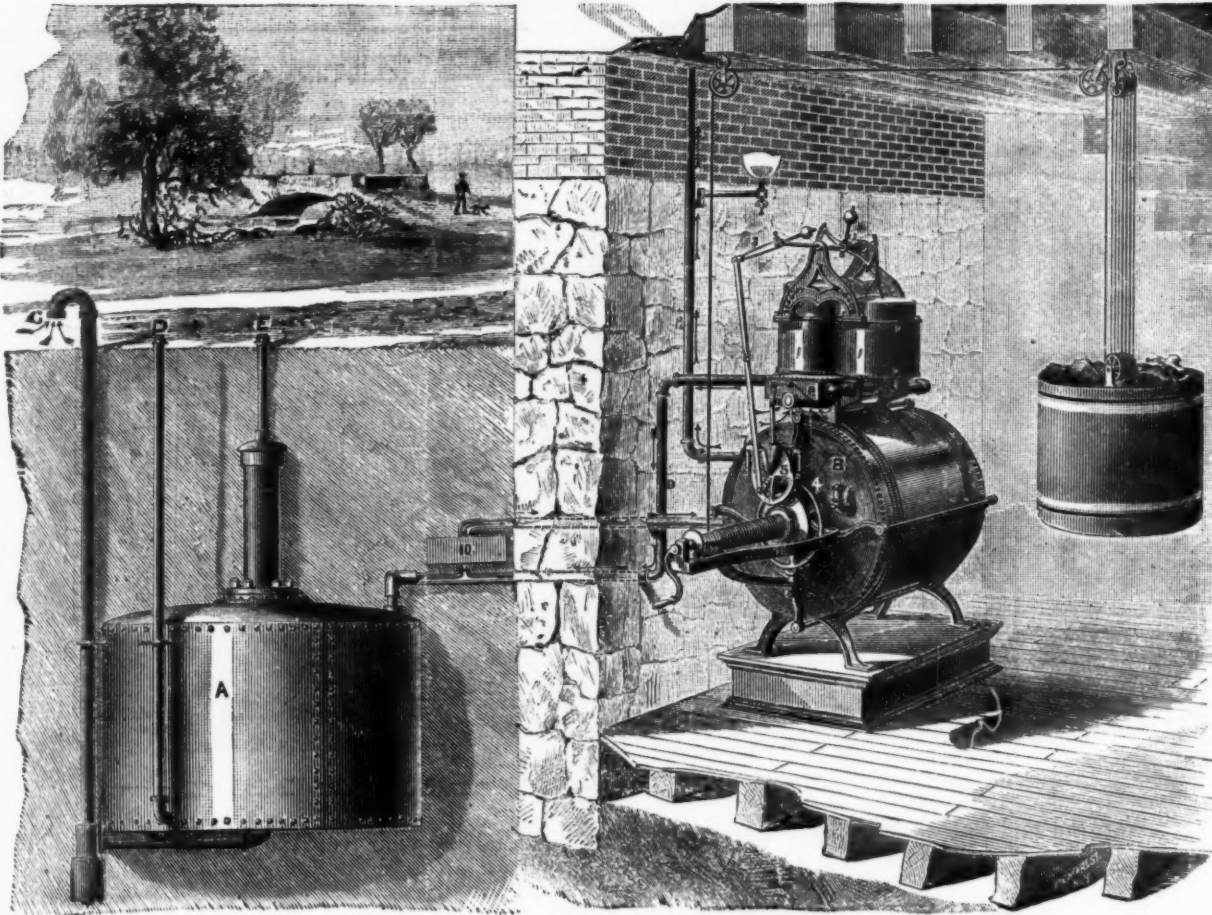
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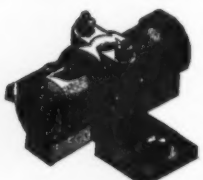
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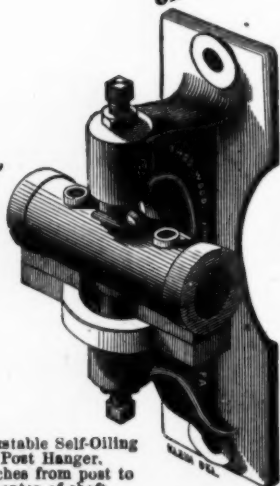
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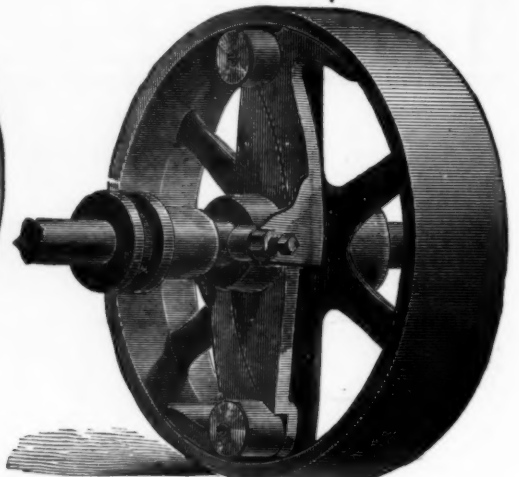
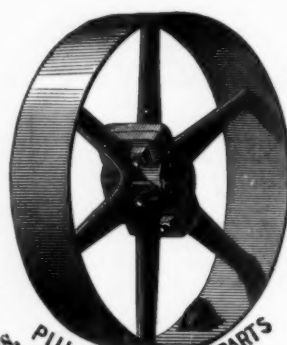
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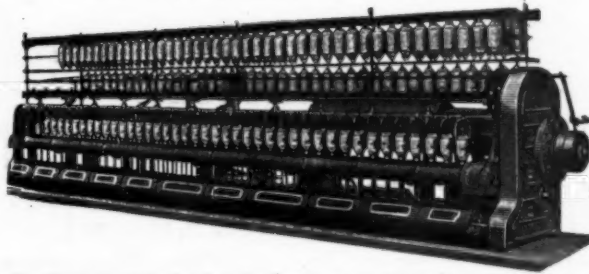
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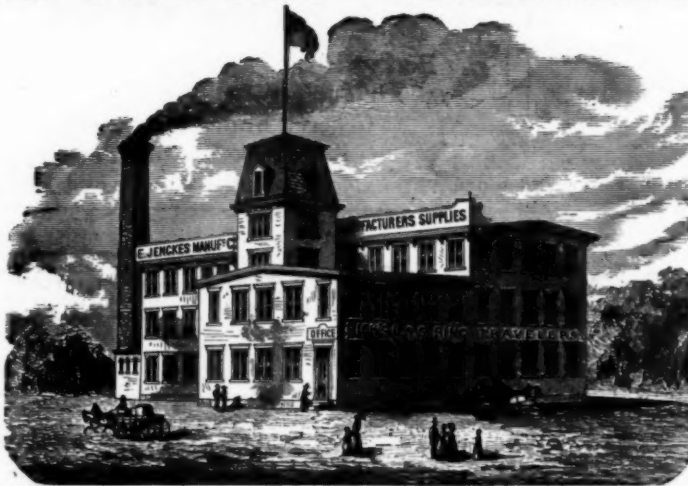
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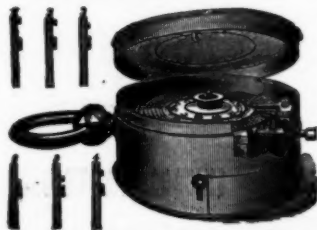
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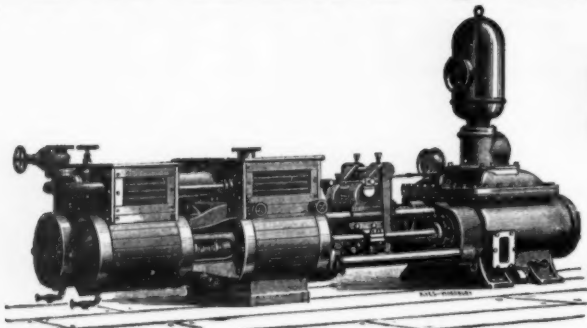
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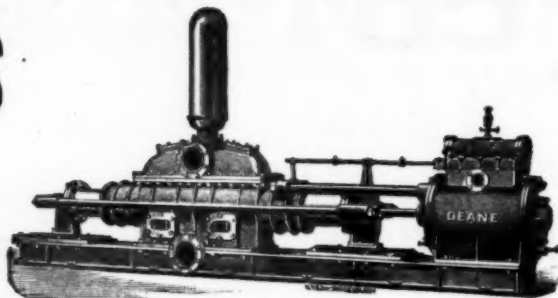
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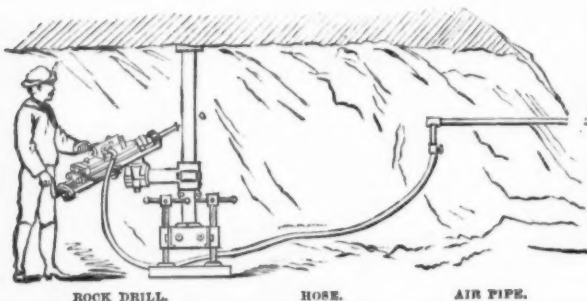
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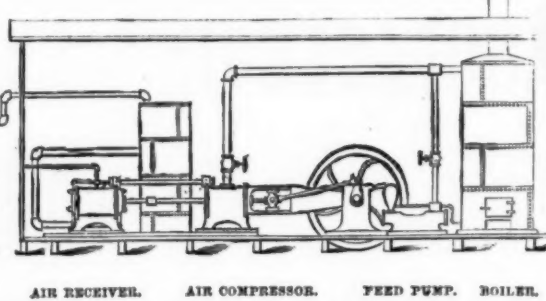
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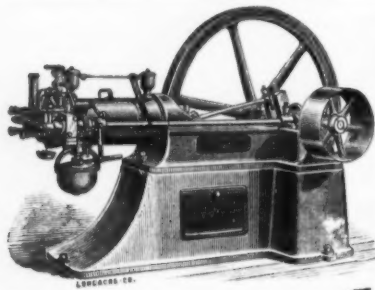
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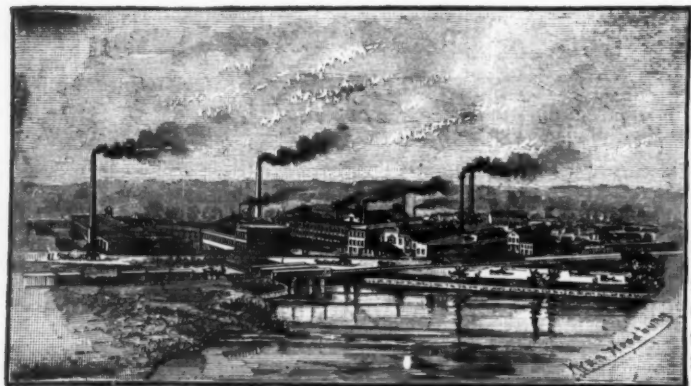
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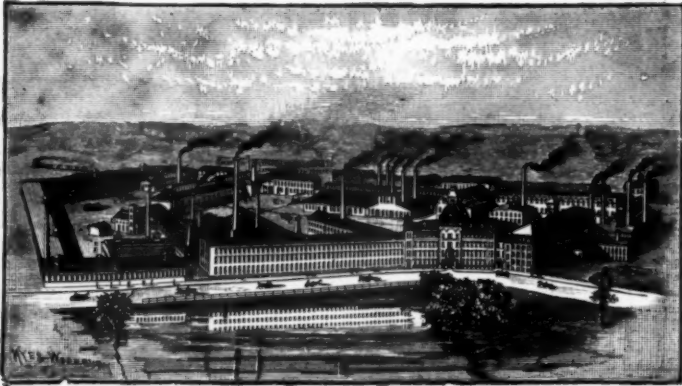
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BALTIMORE, OCTOBER 4, 1884.

IN the death of Mr. John W. Garrett, Baltimore has lost her foremost citizen, and the railroad interests of the country one of their ablest leaders.— In examining the record of Baltimore's progress during the last twenty years, it is difficult to find any great undertaking that has been carried through without the aid of Mr. Garrett or the Baltimore & Ohio Railroad. He was in fact the moving spirit in the advancement of the city, never losing faith or wavering in his strong convictions of the steady growth of Baltimore, and of the continued prosperity of the Baltimore & Ohio Railroad. It may well be a source of profound regret to the people of this city, that the ablest and most persistent champion of their interests has passed away.

In Europe, as well as in America, Mr. Garrett was held in high esteem, not only for his great abilities but also for his sterling virtues. In his well spent life he has left an example worthy of imitation.

THE Chronicle of Birmingham, Ala., tells the tale of Southern progress when it says: "Nearly every exchange which has come to our table this week has had some item of cheerful news. In nearly every village in the State there has been some improvement of a kind which tells in the general welfare of the State.— Little by little solid foundations of our future greatness are being laid, and slowly and surely and steadily we are growing in wealth and strength. Every little industry adds an item to the tax list and every addition to the tax list is an addition to the wealth of the State. No backward step has been taken and none will be taken, for we have built upon a sure foundation.

Overproduction of Cotton Goods.

The overproduction of cotton goods is attracting much attention in the South, and numerous plans are being proposed for overcoming the trouble. It is generally conceded, however, we believe by the majority of Southern cotton mill managers that the quickest way of doing this, will be by running the mills on short time. Hon. Chas. Estes, president of the King Mill Company, of Augusta, one of the leading cotton manufacturers of the South has written an interesting letter to the New York Journal of Commerce advocating a reduction of production by running mills on two-thirds time. He says:

"Non-production, in the sense of less or reduced production, can only be brought about effectually by the concerted action of all the brown cotton goods mills in the United States. I think, after their sad lesson of the last six months, manufacturers are ready to agree to a plan that will effect this. Notwithstanding the failure of the mill men to agree upon my plan at Augusta, in April last, with the lights now before them, I believe they can be brought together and will agree to act in harmony.

If in pursuance of the above suggestions a meeting is held, it should be attended by all the brown cotton goods manufacturers in the United States, those who produce drills, sheetings, shirtings, ducks, osnaburgs and yarns. There is little doubt that fully one-half of these manufacturers have at one time or another stopped their mills for periods varying from one week to a month or more in duration. These spasmodic stops and resumptions, regulated by as many theories of the situation as there are mills, prove a general realization of the plain fact that there is too much cotton goods on hand; and so far so good. But let this remedy be applied with the full effect that will result from intelligent, concerted and harmonious action on the part of all the mills. The basis upon which to proceed in adopting a concerted plan will readily suggest itself to a body containing a multitude of counsel. By a wise and uniform course we will be able to avoid the evil that befell the woolen goods manufacturers in 1883-1884, who stopped and resumed at hap-hazard, a fact which you discussed in your issue of the 17th instant, and which should be a warning to the cotton mills not to pursue the same course.

The question of uniform action is so plain that it seems that there can be no trouble in securing a meeting out of which harmony based on a common experience will result for the best interests of all—operators and stockholders.

Mr. J. L. Williams, of Beaumont, Texas, in a private letter, says: "This country is sadly lacking capital in shape of banks, &c., to help business along. Our great resources will develop slowly but surely. I am now selling daily in my store common furniture, on which the freight from the North is 20 per cent. of the cost, while the timber of which these articles are made grows here almost in sight of our town, and can be bought for a song."

E. W. Ross & Co., Fulton, N. Y., desire to remove their agricultural implement factory, and will receive proposals from business men in towns having good facilities for the business, with cheap iron, coal, and lumber.

The New Orleans Exhibition.

The preparations for the great World's Fair at New Orleans are all progressing finely, and the managers promise that everything will be in order for the opening day. Less than sixty days remain before the doors will be thrown open to the public, and during that time an immense amount of work must be done, if this promise is to be made good. So far the managers appear to have acted very wisely in all their movements, and we think it can be no longer be doubted that, taken as a whole, the New Orleans Exhibition will be the most important that the world has ever seen. Its greatest value, however, over and above all other benefits that will accrue to the whole nation will be the stupendous influence for good that it will exert upon every interest of the South. The good that it will accomplish in this direction cannot be measured by dollars and cents. It is true that it will result in adding not simply millions but tens of millions of dollars to the wealth of the Southern States, but even this will not be the greatest benefit that it will confer; it will mark the opening of a new era in the history of the Southern States, and its stimulating and educational impetus to the people of the whole South, and its influence in attracting a great immigration to that section, will be of more value even than the direct and immediate pecuniary advantages that are sure to follow it.

It is important that the resources of the Southern States should be fully represented at this exhibition, and every State ought to make an earnest effort to so completely exhibit its advantages and attractions as to command the attention of all visitors. In fact, this exhibit should be the grand exponent of the South and her vast resources.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. We invite those interested in the development of the South to make free use of our columns. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more,—so if you desire to attract immigration or capital, or if you know of an opening for profitable investment in manufacturing, mining or kindred pursuits, write us an account of it. It will be published free of cost.

Our readers will confer a favor upon our advertisers and upon us, as well as benefit themselves, if, whenever they write to anyone advertising in this paper, if it is only for a catalogue, they mention that "your advertisement was seen in the BALTIMORE MANUFACTURERS' RECORD." A careful compliance with this request will be much appreciated.

For some time we have been wondering what had become of the Southern Industrial Review, that marvelous publication which was to revolutionize the South, and now we learn from the Southern Industrial Record, of Atlanta, that—

"The 'Southern Industrial Review,' of Atlanta, came last March in creditable form, saw three lingering months, and withdrew into its hole. After hibernating a month or two, it threw off its shell and reappeared in August, under date of July, as the 'Southern Review,' having discarded the 'Industrial' feature of its title. The new frontispiece represents a steamboat running down hill, about to strike a snag, and receive a copious drenching from an overshot water wheel. Also a locomotive, emerging from a beer vault, just in time to be smashed by a huge tree, a woodman has already gotten on a slant of forty-five degrees. Typical representations! The veracity of the 'Southern Review' is vividly revealed in the fourth line printed under its remarkable frontispiece, which reads as follows: 'The only Industrial Journal printed in the South Atlantic States.' There are a dozen 'industrial journals printed in the South Atlantic States,' bearing more honored years than the 'Southern Review' does weeks."

WINSTON, N. C., will soon have to be put in the rank of Anniston, Birmingham, Roanoke, and other remarkably rapid growing towns of the South. A well-posted bank officer of Winston tells of the prosperity of that town in this issue of the MANUFACTURERS' RECORD. Every week lengthens out the list of the developing industrial centres of the Southern States, and it is difficult to say which one is making the most rapid advancement.

A Splendid Paper.

One of the best industrial papers in the South, to our knowledge, is the MANUFACTURERS' RECORD, by Bigsby & Edmonds, Baltimore,—\$3 per annum.

The RECORD publishes every week, under the head of "Construction Department," a list of all new enterprises undertaken in the South, such as cotton and wollen mills, or factories of any kind to be established; old mills to be repaired or enlarged; public buildings, hotels, etc., to be erected; railroads to be constructed; mining enterprises to be inaugurated; furnaces to be started, etc. The information thus furnished is new and reliable, and will be found valuable to constructors and to dealers in mill and railroad supplies, machinery, tools, etc. The RECORD is handsomely printed, and is the leading industrial paper in the South and one of the most ably conducted papers of its class in the United States. We cordially commend it as a reliable paper, devoted to every department of Southern Industrial Progress.—Gazette, Tuscaloosa, Ala.

POITEVENT & FAURE, the big lumber men of Pearlinton, Miss., have received an order for 2,000,000 feet of decking and timber for the French navy.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.

The Lawson Non-Explosive Boiler.

A few years ago Mr. Daniel T. Lawson conceived the idea that water is an explosive, and that all steam boiler explosions are caused by the explosion of superheated water; that the explosion occurs upon a sudden reduction of pressure followed by a sudden check to the exploding water, the result of which is a striking blow far in excess of the tensile strength of boilers. He exploded two boilers in the course of his investigations, and from the experience thus derived, and from certain preconceived ideas, he has built up the following theory of boiler explosions:

"The only explosive material about a steam-boiler is water; and water when super-

taneous at all pressures. As each molecule of water absorbs the last of the 966° it instantly explodes into steam. As the last degree is absorbed cohesion is overcome and repulsion becomes the predominant power.

"The change of steam to water is also instantaneous. Steam remains in its new state only so long as it retains the 966° of latent heat, and the moment it at full volume, with only 212° of sensible heat, parts with one of these degrees of latent heat, it returns to water.

"The explosion of water is similar to that of gunpowder in some respects, but different in others. Each grain of gunpowder passing from the solid to the gaseous state explodes when it has absorbed a certain degree of heat. So with water. Each molecule of water, at the instant it has absorbed 966° of heat above the boiling-point, explodes and

such pressure that it will not fully expand, but, once begun, it changes its state from water to steam.

"The true source of development of the great destructive power in a steam-boiler is the sudden concentration of the sensible heat in the water above 212° (or above 70° in case of a vacuum caused by the condensation of steam) into a part of the molecules of water, passing into them the 966° necessary to change them from the state of water to the state of steam.

"That the stored heat in a boiler concentrates to form steam is shown by familiar experiments:

"As for instance, causing water at less than 212° to boil by placing it in a vacuum; or by merely condensing the steam over heated water in a bottle.

"Again, take a steam boiler under a pressure of 100 pounds and a corresponding temperature of 340°. Remove the fire, and

the second time. They are already stored up in the water.

"Take a boiler containing 10,000 pounds of water at a pressure of 200 pounds and corresponding temperature of 389°. Suddenly reduce the pressure to 50 pounds per square inch, under which pressure water explodes at 300°. There are stored in each of the 10,000 pounds of water 89° of sensible heat above the exploding point—in the aggregate 890,000 thermal units, enough to convert 921 pounds of this super-heated water into steam. In an instant these 89° of sensible heat in each pound of water are absorbed by the molecules of water at the surface and for a considerable depth, and suddenly these 921 pounds of super-heated water explode into steam.

"Thus it will be seen that there is sufficient destructive power stored in the boiler when thus put in action to cause an explosion. If the reduction of the pressure caused by the withdrawal of steam be moderate, and such draught be continuous and uniform, there will be no danger; but if the draught is considerable in quantity and instantly checked, the nascent steam thus suddenly formed and thus suddenly checked will give an impact or striking blow upon the shell of the boiler, the aggregate force of which is equal to the weight of the water before it passed into nascent steam multiplied by the square of the velocity with which it strikes.

"The instantaneous check to the exploding water acts upon the boiler with the same effect as that produced by quickly closing the valve of a water main. In the one case it is the weight of the falling water, and in the other it is the force of exploding water, but the striking effect of the blows is the same, and is measured by the same rule.

"The rational solution of a steam boiler explosion is this:

"The water in the boiler, under pressure, is superheated, and possesses a highly expansive power. Upon a sudden removal of the pressure, without a corresponding reduction of the temperature, it starts into violent evaporation. This mass of nascent steam is checked by coming in contact with the solid and unyielding shell of the boiler. The result is that the aggregate force of this nascent steam strikes every square inch of the shell of the boiler at the same instant and with the same force, and with a power far in excess of the tensile strength of the boiler; and, moreover, this force is augmented at the instant the shell gives way by an immense reserve power caused by the further evaporation of the water in the boiler."

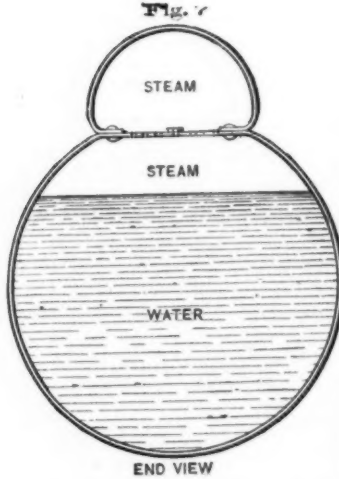
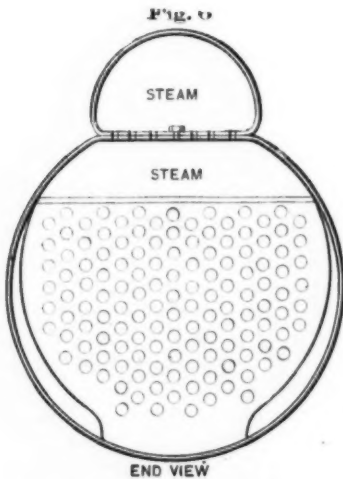
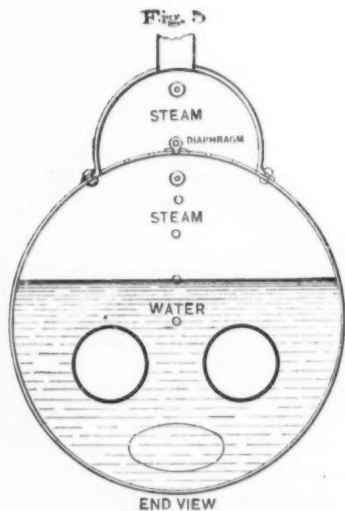
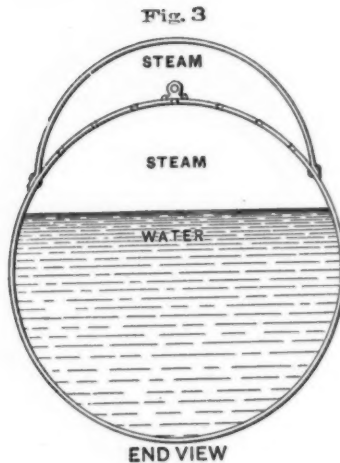
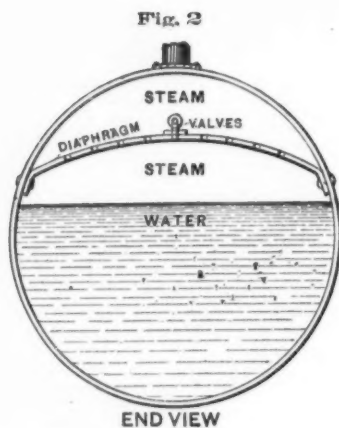
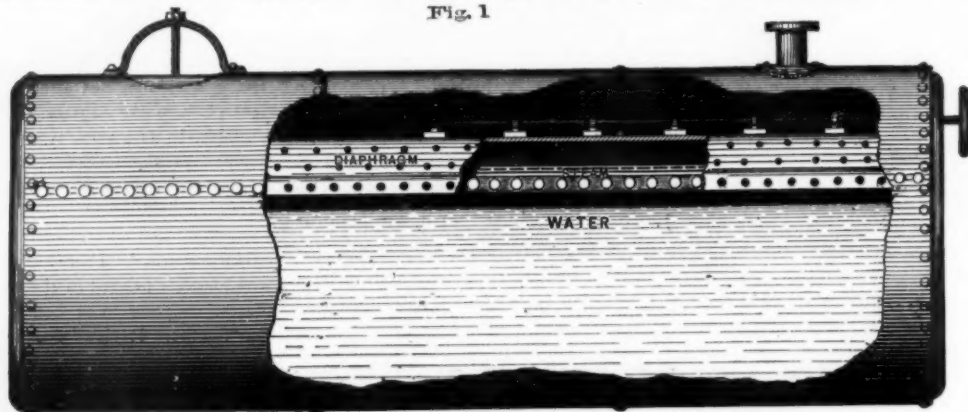
The remedy proposed is in the construction of a boiler with a partition plate dividing the boiler into two compartments, as seen in Figs. 1, 2 and 3. This plate is perforated with holes, whose combined area is less than the throttle valve opening, so that a violent rush of steam is prevented. By this means the pressure upon the surface of the superheated water is kept approximately uniform, and it is claimed that all sudden explosions of any dangerous quantity of water into steam and consequent striking blows are avoided.

On the 16th of June, 1881, Mr. Lawson, at Munhall, near Pittsburgh, Pa., publicly tested his theory, and exploded a boiler of the ordinary style having a tensile strength of 768 pounds, at a pressure of but 290 pounds, being 478 pounds less than the actual strength of the iron.

The experiment was made by suddenly discharging a considerable quantity of steam at 290 lbs. from the boiler into a closed cylinder, the explosion occurring at the instant the cylinder was filled. In March, 1882, he made further experiments at the same place under the inspection of a commission of the U. S. Engineers, appointed by the Secretary of the Treasury, and fully tested a boiler with his invention attached.

The boiler, having the Lawson diaphragm and being 30 inches in diameter, with only 18 inches of water, running down to 11 inches, 4 inches below the fire line, stood every test of rapid escape and sudden check of steam up to a pressure of 300 lbs., without the slightest injury. The same boiler, with the center of the diaphragm removed, reducing it to the ordinary style boiler, with 22 inches of water, 7 inches above the fire line, was exploded at a pressure of only 235 lbs.—or 65 lbs. less than the same boiler had withstood with Lawson's device, under precisely the same circumstances, except as to the quantity of water.

In addition to the advantage of safety secured by this boiler, the owners claim that the arrangement produces dry steam and prevents foaming, the diaphragm securing uniform circulation. It is also said to prevent the forming of incrustation. Fig. 3 is an end view of the form of boiler intended for locomotive purposes. The construction of this boiler is controlled by the Lawson Non-Explosive Boiler Company, 155 Broadway, New York.



heated, which can be done only under pressure, will explode upon a sudden removal of that pressure, with a force quite equal to that of dynamite.

"The boiling-point of water varies with pressure. In a vacuum water boils at 70° sensible heat. Under atmospheric pressure it boils at 212°, and cannot be made hotter unless confined under additional pressure, because the escaping steam carries off the heat as fast as fire can impart it. In a steam boiler under 10 pounds pressure it boils at 241°; 50 pounds, 300°; 100 pounds, 340°; 200 pounds, 389°.

"Water when heated to the boiling point, requires 966° additional heat to change it from the state of water to the state of steam. This change is substantially instan-

passes from water into steam. The expansive quality of the two is different, powder increasing in bulk 800 times, while water increases 1,720 times. The mode of exploding and the general result, large and sudden increase of bulk, are similar. In other respects they differ widely; the explosion of powder is by chemical action; the explosion of water is a physical change only.

"Water differs widely from powder and all other explosives in another remarkable particular. Only a portion of the water may explode—one molecule, the half, or the whole mass. These various amounts in exploding produce results ranging from violent explosions to mild ruptures and the safe operation of the boiler.

When a grain of powder starts to go from the solid to the gaseous state no power can stop it. It may be confined, but combustion, once begun, goes on to completion. So with a molecule of water. It may be put under

the formation of steam will cease. After a short time raise the safety-valve, and the water will begin to boil, and generate and give off steam continuously as the pressure is reduced, until a temperature of 212° is reached, and enough steam will be thus generated and blown off to fill the boiler very many times.

"These tests show that the boiling-point of water is lowered by simply diminishing the pressure. They show this, and also show the true theory of boiler explosions. They prove in the most conclusive manner that the sensible heat above 70° stored in the water concentrates in a part of the molecules of water, giving to them the 966° necessary to change them into steam. The water ceases to boil, no heat is applied, and by merely reducing the pressure the water again boils. The 966° above the boiling-point necessary to cause ebullition are not absorbed from the fire at the instant the water begins to boil

WEALTH IN WOOD.

The South's Vast Timber Resources.

Something of the South's Immense Forests of Pine and Hard Wood.

By CHARLES H. WELLS.

[For the BALTIMORE MANUFACTURERS' RECORD.]
(Continued from last week.)

Of the timber lands of Alabama, I cannot speak so well from observation, but I quote from State reports the following paragraph: "The timber lands extend over an area of about 20,000,000 acres, most of it lying in the southern portion of the State, and consists of pine, cypress, spruce, and several varieties of oak. In the forests, as nearly accurately as can be estimated, there are 20,000,000 feet of mercantile timber, only about 2,500,000 of which are annually cut. The timber business has assumed encouraging proportion during the last few years; numerous saw mills have been erected, and over 1,000,000 acres of timberland have been purchased by lumber men during the past year. The majority of these purchasers came to the State from the lumber districts of the South and West. These lands are penetrated by the Selma branch of the East Tennessee, Virginia and Georgia, and by the Louisville and Nashville system of railroads, and by the Western Railroad of Alabama."

In Mississippi there are quantities of lumber lands lying idle, and to encourage the establishment of factories in the State, the Legislature of 1882 passed an act exempting from taxation for ten years, "the machinery used in the manufacture of cotton or woolen goods, or for the making of all kinds of machinery, or implements of husbandry, or other articles not prohibited by law."—The vast timber region of Mississippi contain, it is estimated over 30,000,000 feet (board measure) of long and short-leaf pine, while many thousand acres are timbered with spruce, cypress, red gum, magnolia, cotton wood, locust and elm. Lands can be purchased at private sale from \$2 to \$3 per acre, while Government lands, of which there are large quantities, can be entered at \$1.25 per acre. A number of persons have entered during the past year from \$30,000 to \$75,000 worth of these lands, principally for the timber growth upon them. The Memphis and Charleston Railroad and the Louisville and Nashville and Alabama and Great Southern Railroads pass through the Mississippi lumber country.

One of the greatest of the semi-southern railroads is the Chesapeake and Ohio, and this popular thoroughfare is very fortunate in that it crosses every one of the really important timber belts in Virginia West Virginia and Kentucky. The line begins at Newport News, a thriving town, way down on the coast near the famous "Old Point Comfort," and extends to Cincinnati and other important points. Between the ocean and Richmond, there is much good pine standing, and quite a little or, as the natives would say, "right smart" of other timber for general use. Between Richmond and Charlottesville, (where the Chesapeake and Ohio intersects the Virginia Midland Railroad,) is one of the finest timber and agricultural belts in the whole South. There are yellow pines in abundance, while in addition there are maples, of which six varieties are found in the State; the mountain birch or mahogany, suitable for articles that require a fine grained wood, susceptible of a high polish, the poplars and the different varieties of oak for ordinary purpose of lumber, and the white pine found in the mountains that is equalled only by the forests of Maine and of the great Northwest. This is one of the few sections of the South where the native wealth of timber has not been abused or wantonly destroyed, more, perhaps, though good luck than good management. From an economical point of view, the question of

due proportion of forest, either native or cultivated, is not less complicated, or less important than in its purely physical aspects. Of all the raw materials which nature supplies for use in the mechanical arts, wood is undoubtedly the most useful, and, at the same time the most indispensable to social progress, and this fact seems to have been recognized in some parts of Virginia. From Charlottesville to Charlestown, West Virginia, is the roughest, wildest, wierdest country one can imagine, the famous White Sulphur Springs being on the route. Here too, are found all varieties of timber, large and small, and there are dozens of good openings for manufacturers. From Charlestown to Lexington, Kentucky, is a fertile country well wooded. This completes a rough outline of the course of the road. It is safe to say that little, if any, real lumbering has been done in this country, except the cutting of railroad ties. The long-leaf pine, the basis of the Southern lumber industry, is found in abundance, while the juniper and cypress are plentiful. The most characteristic and prevalent species of the middle region of Virginia are the oaks. Several kinds of white oak, now so much in demand and so highly prized in ship building and numerous domestic arts, are abundant in all parts of this division, and especially in the mountains. There are also large tracts of white pine on both sides of the Blue Ridge. The hickories are found everywhere, and the black walnut is plentiful in the river bottoms, and on the fertile slopes of the mountains, so common as to be used for fencing, and the wild cherry, mahogany (black birch), and several species of maple furnish abundant cabinet materials, and to these should be added the extensive forests of holly in the eastern region. It seems, after a hurried trip over this timber country, safe to say that if the timber lands of Virginia are left undisturbed for twenty years yet their value will exceed that of all the land in the State now devoted to agriculture, and it is time for the people of the State, and its Legislators especially, to begin to realize and take account of the fact that here is one of the most valuable, (as it is also one of the most undeveloped and little considered) of her natural resources, and its value is appreciating more rapidly than that of any other kind of property in the State; and this from two causes, the operation of which is incessant and rapid, and the results inevitable and soon to become actual, viz: the rapid exhaustion of the more accessible forests of the continent and the constantly accelerating consumption of their products, and the increase and cheapening of means of transportation to those part of the world where demand is greatest. Just here some statistics from the United States Census relative to the development of manufactures in the South will be appropos. The total capital invested is \$313,363,000, and the annual product valued at \$462,500,000, an increase in capital of eighty-one per cent. In 1880 there were 183 cotton manufacturing establishments in the South, with a capital of \$22,000,500, 687,756 spindles and 14,701 looms, which turned out \$21,561,692 worth of products annually. In iron and steel manufactures there was \$32,000,000 capital invested, and an annual product of \$28,000,000 in value; \$12,000,000 were invested in rolling mills, with an out-turn of \$15,750,000 worth of products. There were 133 blast furnaces with an invested capital of \$19,500,000, and product valued at \$11,000,000. The States also produced \$45,000,000 worth of sawed lumber. There were forty cotton-seed oil factories which produced \$6,500,000 worth of products. A grand total of 588,791 persons are now engaged in mining and manufacturing industries in the South. The product of the miners was \$15,000,000 in value which covered 6½ million tons of coal, a mineral in which she is incalculably rich, it having been truly stated that Alabama alone could, if necessary, supply not only the South, but the entire country for an indefinite

period. This article and iron, and other useful ores, exist in other States within the Southern belt in the greatest abundance.

The third section of Southern timber land lies in the Carolinas. South Carolina can boast of but thirty counties, but what she may lack in quantity, she makes up in quality. The quality of everything in the Palmetto State is the boast of her people; her blood is the bluest, her society the most exclusive, her people the most cultured and aristocratic, her fields are the richest, her manufactures are the most profitable, her cotton the finest, her rice the best, her phosphates the strongest, her railroads the most prosperous, her soil the reddest, her mud the stickiest, and her negroes the blackest you will find anywhere in the South. In the value and accessibility of her forest lands, South Carolina stands second in the list of Southern States bordering on the Atlantic ocean,—North Carolina, very improperly christened the "Rip Van Winkle State," being at the head of the list. These forests of Dixie, once interesting to the world because of the pine tree only, are now coming into use for a variety of purposes. The black walnut is being transported to the North for furniture, the sweet gum is made into plates and delicate boxes, of which millions and millions are annually consumed, the hickory, dogwood, oak, and other hard woods are all worth money in the market, for their own respective uses. The old field and spruce pines of the East, and other soft-grained woods are about to enter largely into the manufacture of paper, the demand for which can be appreciated when it is understood that six car loads of spruce logs are used for each issue of the New York Herald alone. The most valuable timber lands in South Carolina are penetrated by important railroads—The Atlantic & Charlotte Air Line, the Greenville & Columbia, the Charlotte, Columbia & Augusta, and the South Carolina Railway; all these roads belong to what is known as the Clyde system, called the "Associated Railways of Virginia and the Carolinas." The South Carolina railway, extending from Charleston to Augusta, Georgia, and to Columbia, the capital of South Carolina, under the management of Mr. J. B. Peck, is doing an immense business in lumber and cotton, while the "Piedmont Air Line" system, since Colonel A. L. Rives, the new Vice-President and General Manager assumed control, has been doing a traffic second to none in the South. And E. McBee, Esq., Superintendent of the picturesque Western North Carolina railroad, informed me that he has recently put 6,000,000 feet of lumber into the eastern market for one firm—the Mitchell Lumber Company, presumably—in Waynesville. The Central railroad, of Georgia, that vast and powerful corporation, having now attained control of the Augusta & Knoxville railroad to Spartansburg, will be able to put South Carolina timber on the market at Savannah, as the new Augusta & Knoxville line extends diagonally across the entire State, reaching, when completed, to Shelby, North Carolina. In illustration of the forest wealth of South Carolina, and of the diversity of woods to be found within her borders, it is shown that of the species found east of the Rocky Mountains, there are twenty-two varieties of oak, of which nineteen are found here; eight varieties of pine, all of which are found here; five varieties of spruce, of which four are found here; five of elm, three of which are found here; two of walnut, both in abundance here; five of birch, three of which are found here; five of maple, all of which are here in large quantities; eight of hickory, all found in South Carolina; seven of magnolia, all of which grow here; besides many other varieties of timber not found elsewhere.

Of this rich and varied country the learned divine and eminent botanist, the late Dr. Moses A. Curtis, says: "In all the elements which make forest scenery attractive, no

portion of the United States presents them in happier combination, in greater perfection, or in larger extent than the mountains of North and South Carolina."

"Grand in her rivers and her rills,
Grand in her woods and templed hills,
Grand in the wealth her soil conceals,
Grand in her grain and cotton fields,
Grand in her mines, in commerce grand,
In sunlit skies and fruitful land,
Grand in her men, but grander far,
In Spartan mothers, as her women are."

So sings a Southern poet, and a fit tribute it is to the women of South Carolina, noted alike for their beauty, culture, wit, refinement, and hospitality, and also a fit tribute to her forest-covered hills, where fortunes wait for those who have enterprise to come and hew them out of the oaken logs.

Some people of the North labor under the impression that all Southern people are, in common parlance, terrorists let loose. All people are liable to make little mistakes; this is an immensely large one. They are a most courteous, hospitable, honest, and open-handed, large-hearted people; every grasp of their hands denotes that the words of welcome spoken, come from deep down in good and honest hearts. If a man is what he should be, the people of the South are a good people for him to locate and dwell with; they are not afraid to mention a man's standing in the community, and to recommend him to the confidence of strangers if he is trustworthy; if a man is a rascal, the straightforward business men don't hesitate to tell strangers of it, and warn them of his unreliability. The great majority of men in both cities and country are upright and brave, and can generally guess pretty close to the kind of man a coat has in it. They are courteous to all gentlemen; they know an insult, and are not afraid to resent it; they are just the kind of people that an upright, enterprising man of any country likes to associate with.

Those of the far-sighted capitalists of the North who see what the inevitable outcome of this forestry question must be, recognizing that North and South Carolina will, ere many years, be the lumbering centre of this continent, are buying large tracts of the most valuable land for investment. The other day I took a ride over the South Carolina railway, from Columbia, through some of the finest timber land in the South. In the vicinity of Barnwell, and along the railroad from Branchville to Charleston, is some of the most valuable pine lumber in the State—the finest grade of yellow pine. This ride to Charleston is truly delightful; the country abounds in rolling hills and deep fertile valleys, their surface covered with luxuriant vegetation, and a magnificent growth of timber peculiar to this region. The soil is of two kinds, a rich dark loam, possessing those moist, spongy qualities so indicative of superior land, and a red sandy soil of wonderful fertility; the air is mild and invigorating, and the general tone of the country is one of prosperity. The grand old forests of elms, oak, and pine cast their shadows upon the velvet green of rarest lawns; streams of purest water course through the valleys, and the quaint old style dwellings of ante-bellum days stand in imposing beauty amid those enchanting surroundings. Poverty seems an evil not very largely prevalent, and on every hand may be seen evidences of prosperity in keeping with the generous gifts nature has bestowed. Among the interesting things one sees along the South Carolina railway are the farm houses of the poorer people; these buildings are constructed of hewn logs, with split shingle roofs, and, although not very attractive from an external point of view, are certainly very comfortable and convenient within; there are no stairs to climb, for the buildings are all of one story; the great open fire-place, with a 200-pound hickory log, makes the room glow with comfort, and we almost envy these farmers their comfortable quarters as we shoot past in the train, while the evening shadows gather around us.

[TO BE CONTINUED.]

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

Kleinbacker & Krumpke, Hanceville, Ala., are enlarging their mill.

The Black Creek Short Line Railroad has been incorporated by J. D. Webb, of Birmingham, Ala., and others.

The saw mill of Willis Hall, Lincoln, Ala., was damaged September 24 by boiler explosion.

Elliott & Caukins, Tuscumbia, Ala., have prepared plans for a \$30,000 dwelling house to be erected at Sheffield, Ala., for A. J. Moses.

A new road is to be organized as the Anniston & Attalla Railroad to build a line immediately from Anniston, Ala., to Attalla; office will be in Anniston. J. C. Fawcett, Louisville, Ky., is president.

A street railroad is to be built from Anniston, Ala., to Oxford.

ARKANSAS.

Several saw mills will probably be built along the new Pine Bluff & Swan Lake Railroad. C. M. Neel, of Pine Bluff, Ark., can give particulars.

FLORIDA.

A saw mill is to be built at the new town of Bayard, Fla.

The Florida Southern Railway is receiving bids for building 30 miles of road, from Leesburg to Pemberton.

GEORGIA.

The Barrett Paper Mill Co., of Augusta, Ga., have nearly rebuilt their paper mill previously reported as burned.

Jos. Miller & Bro., Lothair, Ga., have just put up a saw mill.

The Enterprise Compress Co., capital, \$50,000, has been incorporated in Augusta, Ga., by Charles H. Howard, J. J. Doughty and James P. Doughty.

Robert Winship, George Winship, Charles R. Winship, R. E. Rushton, C. J. Hancock and F. H. Schenck have organized in Atlanta, Ga., the Winship Machine Co., to manufacture machinery. Paid up capital \$200,000, with privilege of increasing to \$500,000.

Stroud & Sewell, Grantville, Ga., have completed a large ginnery.

Entreken & Ashmore, whose saw mill near Carrollton, Ga., is reported in this issue as burned, will rebuild immediately.

The Electric Light & Power Co., Savannah, Ga., are increasing their machinery.

A. J. Cash and others are building a ginnery at Bremen, Ga.

Meaders & Co., Maysville, Ga., are putting up a fine ginnery.

Miles & Horn, of Toledo, Ohio, have received the contract to build the capital at Atlanta, Ga.; price \$862,762.

KENTUCKY.

F. J. Miller, Carrollton, Ky., has nearly completed his new carriage shop.

Showers Bros., of Bloomington, Ind., contemplate erecting a large furniture factory in Lexington, Ky.

Overly & Thomas, Paris, Ky., will establish a tobacco factory.

J. J. Brumback, Verona, Ky., has rebuilt his saw mill lately burned.

Applegate & Hamilton, Falmouth, Ky., will build a corn meal mill.

The Chattanooga Manufacturing Co., Chattanooga, are negotiating for establishing a carriage and wagon material factory in Lexington, Ky.

LOUISIANA.

J. S. Stockwell, Cone City, La., (Post-Office, Shreveport, La.) has erected a ginnery and hoe handle factory which he will soon enlarge and also add an axe handle factory.

MARYLAND.

Chas. Zies, 89 and 91 S. Fremont street, Baltimore, has just established a machine shop.

The Edison Electric Illuminating Co., has been incorporated at Hagerstown, Md., by J. W. Stonebraker, J. H. Beachley, and others.

The Baltimore Dredging Co., capital \$100,000, has been incorporated in Baltimore.

The Beaver Dam Marble Co., Cockeysville, Md., have just completed a \$40,000 mill for sawing marble, previously reported, and will put new machinery into one of their old mills this winter.

A. Schultz & Co., Baltimore, have enlarged their factory for making canner's tools, and will put in new machinery.

The Southern Baxter Electric Light and Power Co. has been incorporated in Baltimore by Dr. Alan P. Smith, B. M. Greene, Wm. Whitridge, and others, to manufacture and sell electric light machinery, &c. Capital \$1,000,000.

MISSISSIPPI.

The Illinois Central Railroad are surveying for a new road from Memphis, Tenn., to Lexington, Miss.

It is thought that the construction of the Mississippi, Arkadelphia & Ultima Thule Railway from Arkadelphia to Arkansas City, will shortly begin.

Cooks' Mill near Bradley, Miss., was lately wrecked by a boiler explosion.

NORTH CAROLINA.

The Salem Iron Works, Salem, N. C., will add a boiler shop.

The Pepper Mining Co., Jas. A. Pepper, manager, Danbury, N. C., will develop coal mine.

J. D. Stanley, of Wilmington, N. C., will establish a creosoting factory, at Charleston, S. C.

SOUTH CAROLINA.

The Greenville Oil and Ice Co., Greenville, S. C., will build a fertilizer factory.

The Columbia Hoisery Co., Columbia, S. C., expect to double their capacity.

TENNESSEE.

R. L. Cochran & Co., Memphis, Tenn., whose box factory is reported in this issue as burned, will rebuild.

David C. Richards and John B. Guinn have recently started the Enterprise Machine Works, Knoxville, Tenn., for the manufacture of steam-engines, circular saw mills, and all kinds of grist-mill machinery; also shaftings, pulleys and hangers.

The Board of Public Works, Nashville, Tenn., contemplate spending \$10,000 for new boilers.

The Chattanooga Cooperage Co. have put in a complete new outfit of machinery.

Carpenter & Brown are erecting a saw mill on the Hiwassee river, Tenn.

Contracts will soon be awarded for building the Memphis, Salem & Brunswick Railroad from Memphis to Holly Springs, Miss.

F. E. Champion, Knoxville, Tenn., is erecting a new building for his broom factory.

TEXAS.

The Galena Gold and Silver Mining Co., has been organized at Mobeetie, Texas, by W. M. McKamy and others, to operate mines.

The Ahrenbeck Oil Co., Brenham, Texas, are putting in new machinery.

F. N. Janes, Lorena, Texas, will rebuild ginnery lately burned.

The Nona Mill Co., capital \$50,000, has been incorporated at Nona, Hardin county, Texas.

There is some prospect of a new flour mill at Clifton, Texas.

VIRGINIA.

Mr. Lane, Claremont, Va., has commenced work building his grist mill.

The Atlantic & Danville Railroad will erect repair shops at Claremont, Va.

WEST VIRGINIA.

Charleston, W. Va., continues to discuss the building of water works.

Arch. Young will erect a saw mill on the Elk River, W. Va.

The River & Rail Electric Lighting Co. has been incorporated in West Virginia by Washington capitalists.

BURNED.

Saw mill of Walker & Ferrell, Burwell, Ga.

Saw mill of Entreken & Ashmore, near Carrollton, Ga. Will rebuild at once.

Mill of J. D. Wilson, Ridgely, Caroline county, Md. Loss \$5,000.

Shingle mill of L. H. Adams, Raleigh, N. C. Loss \$2,000.

Missionary Ridge Soap Factory, Chattanooga, Tenn. Loss \$4,000.

Drake & Co.'s saw mill, Petersburg, Ky. Loss \$5,000.

Ginnery of J. M. & C. J. Foster, Bossier Parish, La.

R. L. Cochran & Co.'s box factory, Memphis, Tenn. Loss \$18,000. Will rebuild.

Hickman Furniture Factory, Hickman, Ky. Loss \$18,000.

MANUFACTURING.

MR. F. H. FOLSOM, millwright and mechanical engineer, No. 48 S. Frederick St., reports his business as good, orders having been received for new and repair work.—The prospects are very encouraging for fall trade.

MESSRS. JOHN C. FROELICH & CO., machinists, have no new contracts to mention as yet, but are expecting large jobs which will keep them going for some time. Their order book for repairs is well filled.

ATTENTION is invited to the advertisement of Mr. Wm. C. Codd who has for sale the following: 2 four horse power engines, 4 eight horse power, 4 twelve horse power, 3 fifteen horse power, 2 eighteen horse power, 3 twenty horse power, 3 twenty-five horse power, 1 thirty horse power, 1 thirty five horse power and 1 forty horse power; 2 steam pumps, 1 1/4 inch suction and 1 inch discharge, 3 pipe machines, too wrought rim pulleys and other machinery used by engineers and machinists.

MESSRS. DUFUR & CO., since our last report, have received a number of large orders principally from parties in the South, and large and small jobs from firms in the city.

MR. WM. L. PETTIT, boiler manufacturer, has considerable work on hand, consisting of new and miscellaneous repairs. He has in stock a supply of all kinds of boilers.

MESSRS. JAS. MURRAY & SON, machinists, 40 York street, have been working on large jobs for brick manufacturers in this city.—They look for a very material increase in their business this fall.

MESSRS. J. S. JOHNSON & CO., manufacturers of seins, nets, &c., South street, report their business constantly on the increase, especially in the South.

MR. JOHN N. MARQUETTE, engineer and machinist, W. Falls avenue, has orders on his books to keep him going for some time. He has just put in a complete outfit for a a kindling factory in the city, and has been overhauling a lot of machinery.

MESSRS. E. J. CORD & CO., machinists, S. Caroline street, have no new contracts, but are finishing up old ones mentioned some time since in the MANUFACTURERS' RECORD. Their supply of repair work is liberal.

THE following liberal offer is made by Mr. J. McDonald, Union Mills, Fluvanna Co., Va.

"I have a never-failing water power, (controlling all the water of the Rivanna River) and a brick cotton factory 45x75 feet, four stories; a brick picker house, 18x18 feet, three stories; new flume and bulkhead. Boats can come within fifty feet of the door to load and discharge cargo. The building is heated by steam. All the line and counter shafting is in place. The water wheel, main gear and driving wheel are all ready to attach belting. I will give lease of the above for ten years free to any one who will put in machinery and employ thirty or forty hands. The mill was formerly run on cotton yarn, turning out 1,200 pounds a day. I have a flouring mill, store, two plantations and lime quarry, which take all my time, and I cannot attend to anything else; and I desire to have the factory running. Hence the above liberal offer. At the expiration of the ten years I will make a new lease on favorable terms, take an interest in the concern, or if no other satisfactory way can be devised, will buy it on equitable terms. There are eight tenement houses, (needing repairs,) that I would let go with the factory. Labor is very cheap here, and plenty of it; good able-bodied men get fifty cents per day, and women twenty-five. Living expenses are very low. This is a beautiful location, on the Rivanna river and canal, seven miles from Keswick, on the Chesapeake & Ohio Railroad, and one of the healthiest sections in the United States."

IN speaking of the MANUFACTURERS' RECORD the Pensacola Commercial says: By-the-way the "RECORD" is doing more to make known the resources of the South and its progress and development than any other paper that we know of, publishing every new enterprise and giving valuable and reliable information of every section south of Mason's and Dixon's line, and it should receive the hearty support of every Southern man, especially manufacturers."

THE Charleston, S. C., *News and Courier* came out last Monday as an 8-page paper instead of 4 pages as heretofore, printed on one of Hoe's latest presses built to order at a cost of over \$27,000. The *News and Courier* is one of the most enterprising papers in the South, and richly merits the prosperity which it is enjoying.

LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

A Town of Many Factories.

Winston and its Great Prosperity.

WINSTON, N. C., Sept. 19, 1884.

Editor Baltimore Manufacturers' Record:

The town of Winston, North Carolina, perhaps, might justly be entitled to a paragraph or two in your MANUFACTURERS' RECORD. The enterprise of this young town in this old State, with a population now of six thousand, is rapidly pushing her into a city of fair proportions. There are now within the hearing of our town bells more than forty manufacturing establishments; some of cotton fabrics, some of woolen, some of agricultural implements, but mainly consisting of manufactories of tobacco, which is the great staple in central and western Carolina. There will this year be manufactured at this place many million pounds of tobacco. The North Carolina tobacco has a world wide reputation for being the finest grade of tobacco upon the globe, and her manufacturers have a patronage as broad as the union of the States.

The crops generally this year, now being harvested, are without a parallel. Never was there such an abundant production, not only of tobacco but of wheat and corn, in fact, of every article grown upon the farm. The fruit crop alone will be worth many thousands of dollars. The outlook therefore for the coming year is most gratifying. The railroad interest, too, of this immediate section, notwithstanding the recent disasters on Wall street, New York, and other localities, is still being pushed to successful termination. The new road known as the Yadkin Valley, extending from the Atlantic ocean to the mountains, and penetrating this section, is in rapid progress of completion. And as soon as the money market so far recovers as to justify the sale of bonds at a fair equivalent, the work of the extension of the Virginia Midland through North Carolina to Charlotte will be resumed and pushed to completion,—when this locality will become the very garden spot of the South, and a place unrivalled for the prosperity, health and happiness of its people. In fact, taking in the whole State, I might well say, that all the essentials tending to build up and solidify a great State are now being developed apace in North Carolina. Her agricultural and manufacturing interests, the great substratum of all State prosperity, within the last ten years have more than duplicated the past. Her railroads have penetrated all sections, crossed the mountains of the West and connected with the Tennessee and Virginia systems. Her harbors and navigable rivers are being worked into utility, and the whole State is on a boom of prosperity. Towns and villages rivaling western cities are being reared in various localities, while capital, the great artery and life blood of all prosperity, is accumulating from every quarter. The tobacco interest alone, which is so abundantly produced in this State, is adding its millions annually to the wealth of the State, nor is her wheat growing and cotton crop of less magnitude,—while her minerals, gold, iron and copper promise to eclipse all rival and adjoining States.

The increase of her population, too, is striking and wonderful, and in full proportion with the growth of her wealth and prosperity. The tide of immigration that in former years swept from her borders the brain and muscle of her people, has changed its current, and intelligent enterprise from all quarters is seeking foothold upon her genial soil, and it may be well calculated that North Carolina is soon to become one of the noblest and greatest of her sister States. Nature has so designed it. Her soil, her climate, her water powers, her minerals, her manufactories, the push and energy of her people, all portend the grandeur of her future.

TAR HEEL.

[The above letter from a bank officer in Winston does not, we feel sure, overstate the steady advance of North Carolina, although it seems to be impossible for the Wilmington Star to believe that any progress is being made under "that thriving tariff" now in existence.—Editor MANUFACTURERS' RECORD.]

Additional Reports of Southern Trade Prospects.

Charleston, W. Va., Sept. 26, 1884.—We have had an exceedingly dry season and of consequence a dull one, but present indications point to better and more prosperous times.—PEMBERTON & DONNALLY.

Canton, Ga., Sept. 22, 1884.—The corn and cotton crops (the main crops) in this section are just now suffering very much for rain. In fact in some portion of the county cotton is reported a failure and that there will be no second crop or opening of it; corn is also reported in bad condition. A two-thirds crop of either will be good. We have fine water power on the Etowah and Little Rivers, in many places unsurpassed, which ought to induce many other manufacturers here. One narrow gauge road passes through the county and another from the coal fields of Alabama will soon reach us. Splendid brick academy, excellent water and climate and cheap living; property cheap and the town growing.—BEN F. PERRY.

Asheville, N. C., Sept. 22, 1884.—Wonderful improvements going on in this city and section; fourteen counties tributary to it. Agriculture has been greatly improved; tobacco culture increasing at a rate which is phenomenal. This is the best market in the South for the now famous North Carolina bright tobacco. New tobacco factories are in course of erection; new works for working lumber for various purposes are going up and increasing. All brought about by rapid construction of Western North Carolina railroad, and certain completion of Asheville & Spartanburg Railroad. Crops very good and promising.—R. M. FURMAN.

Carrollton, Ky., September 22, 1884.—Fifty houses have been erected in this town in past year. A furniture factory, capital \$40,000, and the Barker Tobacco Co., capital \$150,000, and various other small enterprises have been established. Fine new court house built. Steam ferry on Ohio just gone into operation. The manufacture of woolen goods, lumber, furniture, and tobacco rehandling are our largest businesses, and they are increasing capacity, while other institutions are projected. New turnpikes are being built throughout the county. Tobacco crop larger by one-third, in acres, than ever before; quality medium. Corn fair quality. Small grain of all kinds good. Good lamb and cattle crop.—E. A. GULLION.

San Antonio, Tex., Sept. 15, 1884.—This portion of Texas has been afflicted with an unparalleled drought this year, no rain having fallen since May last. The early spring rains, however, enabled farmers to raise fine crops of corn and small grain, but the cotton is decidedly short, not half a crop having been raised. Cotton and cattle are the great sources of revenue in this section, and both have suffered materially from the continued drought, the latter especially from scarcity of water. If, however, we have a mild winter, or as is usual no winter at all, the cattle interest will look up in the spring, and our section will move off smoothly and prosperously as heretofore. Money is exceedingly tight, and now is one of the finest opportunities I have ever known for capitalists to invest in cattle and sheep, and in grazing lands. We are greatly in need of manufacturing establishments in this place; with the finest water power, we haven't a single spindle or loom running. E. E.

Brewton, Ala., Sept. 27, 1884.—Unfortunately turpentine and rosin have found a dull market through the entire season, and the timber market has been depressed for the past two years, without indications of an early revival. Notwithstanding the unsatisfactory condition of the market for these staples, a brisk business in the way of general improvement is noticeable amongst mill and turpentine men, in increasing their facilities for handling material by labor saving processes. A reaction in the lumber market is confidently expected later in the season, which will arouse our dormant machinery into life and activity.—R. L. MC CONNELL, Publisher Banner.

If you expect to visit the Cincinnati Industrial Exposition, it will be well before going to decide at what hotel you will put up. For many reasons The Palace Hotel will be found one of the most desirable stopping places in the city. It is convenient to the cars leading to the exposition building, and is a convenient central point from which to take in all the points of interest about the city. It is a splendidly furnished hotel, first-class in its appointments, and its rates are reasonable.

Improvement in Hollow Punches.

Among the annoyances encountered in tin-shop work may be mentioned the trouble and delay incident to the use of that necessary tool, the hollow punch. The tinner, fitting his punch, frequently wastes from ten seconds to half a minute in getting it accurately set on the work that is to be punched. The difference that almost always exists between the size of the punch and that of the circle which indicates the position of the hole to be made, renders it necessary to look all around the punch several times in order to be sure that it is properly set. After this has been done, if the material to be punched is very thick, the punch frequently bounds from the mark, resulting in the necessity of resetting it as often as a blow is struck. When the operation is finally completed the tinner finds that the piece got out has lodged in the hole of the interior of the punch. After three or four pieces have so lodged, time must be taken to extract the same. This is sometimes attempted by hammering on the side of the tool, frequently resulting in damage to it. Sometimes the attempt is made to get out the piece by the use of a scratch awl or other prying instrument. This usually results in serious damage to the cutting edge of the punch. It also spoils the temper of the operator. A practical shopman whose addiction to profanity was developed by the use of the old-style hollow punch, which has long been in use, sought to overcome all these objectionable features. The result of his effort was the production

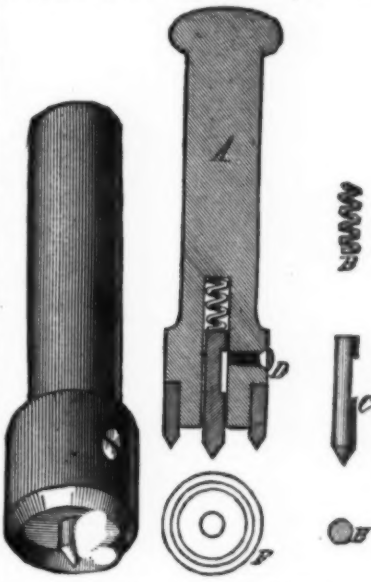


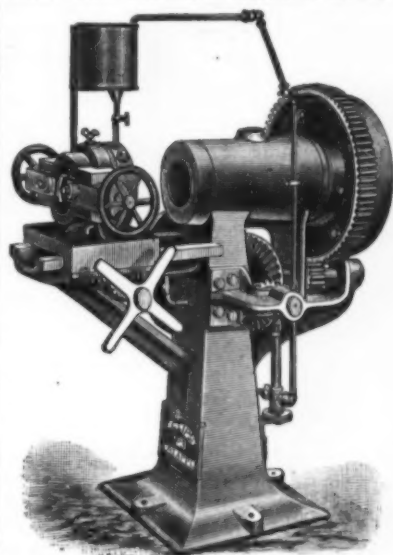
FIG. 1—GENERAL VIEW. FIG. 2—VERTICAL SECTION AND DETAILS.

of a punch which is illustrated herewith. It is known as the "Automatic, or Self-centering Hollow Punch." The patentee is Mr. Edward McArdle, who was for some years of the shops of Messrs. Butt, DePue & Co., Knoxville, Tennessee. This tool is now being manufactured for the trade by the Rothweiler Manufacturing Company, of Newport, Ky.

By an inspection of the engravings, its construction and operation will at once be perceived. The simplicity of the device will be appreciated by tinsmiths. The makers assure us that wherever seen or tried these punches have created surprise and have given good satisfaction. No time is wasted in using them, the punch being properly centered by means of a center-point which is brought to bear upon a prick-mark made in the center of the hole to be cut. The punch by this means is placed in correct position in an instant, and it may be used in the dark if necessary. The center-punch holds in position, so that it is not likely to be jarred out of place by any number of blows. The spring within the punch is sufficiently strong to force out the punchings the instant the tool is raised from the work, and yet not strong enough to impede the movement of the tool or retard the force of the blow struck. The manufacturers state that these tools are being made of the best materials, combined with the best workmanship. Large quantities are being manufactured, ranging in size from 1/2 inch to the largest that is demanded, and the tools will be found on sale by all leading jobbers of tinner's stock.

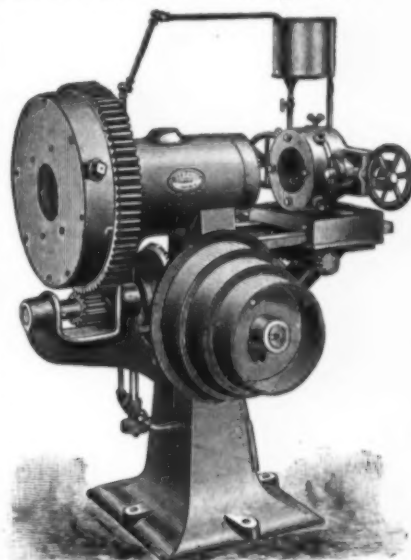
Eclipse Power Pipe Machinery.

The favor with which the "Eclipse" hand pipe machines, made by Pancoast & Maule, 243 South Third street, Philadelphia, have been received, has induced the makers to place on the market a light and very compact power machine possessing similar features. This machine is illustrated in the



ECLIPSE POWER PIPE MACHINE, FRONT VIEW.

accompanying engravings. It is especially designed for use in large manufacturing establishments, mills, railroad and machine shops, as well as in the regular steam-fitting trade. The machine is simple in construction, powerfully geared, and occupies less floor space than any other tool of similar capacity. It is fitted with an automatic oil pump which is supplied from a small reservoir in the hollow base, from which the oil is pumped to the can on the cutting head. By this means a continuous flow of oil is supplied to the work without waste. The same oil is used over and over again, and is



ECLIPSE POWER PIPE MACHINE, REAR VIEW.

supplied in such a way as to obviate the necessity of oiling by hand. Unlike many other tools of its class, the gripping chuck is placed at the back of the machine, thus securing the greatest possible distance between the point where the pipe is held and that at which the threading dies operate. This arrangement secures straight and perfect threads, even when the pipe has a slight bend or kink in it as is frequently the case. By this arrangement, too, the gripping chuck is easily accessible, and makes a most convenient and powerful vise for screwing or removing fittings from the various sizes of pipe within the range of the machine. The machine is said to be noiseless in its operation, and is so compactly arranged that all the working parts are in convenient reach of the operator. In the cutting-off head the knife is reversed, thereby allowing oil to flow over the cutting edge in place of being carried away on the cutting, as is sometimes the case. It is not necessary to reverse the motion of the machine to cut off pipe after threading it.

New Automatic Knife Grinding Machine.

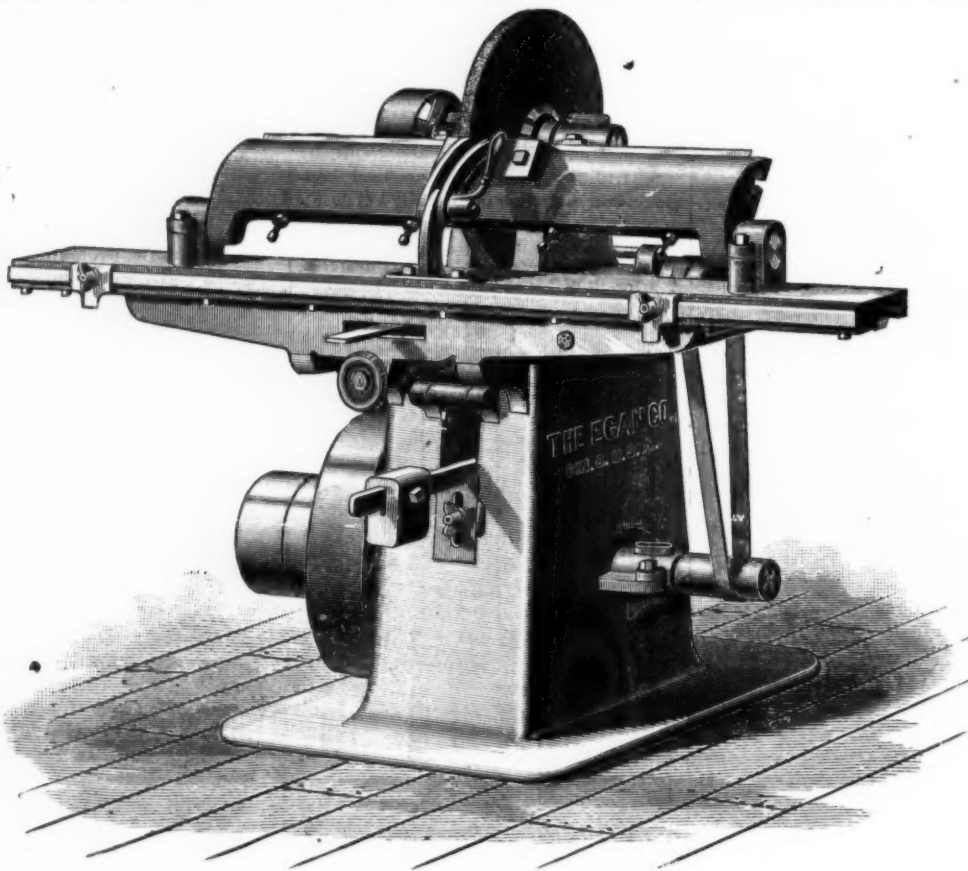
We illustrate on this page a machine recently introduced by The Egan Co., of Cincinnati, O., for the grinding of all kinds of planer-knives. It is a very compactly and neatly designed machine, and is one that will be found valuable in any factory where planers are run, as the knives can be kept at all times in perfect condition with very little trouble, as the machine requires no attention whatever after the knife has been fastened to the clamps and the wheel set in motion. The amount to be ground off as well as the rate of feed toward the wheel is readily adjustable. The carriage has considerable lateral motion to and from the wheel so as to allow the wheel to be worn down quite small before becoming useless. The clamp on which the knives are fastened can be swung clear back by loosening one clamp screw. The machine will grind knives any length from 32 inches down, and as the knives are ground slightly concave they can

are all on the one frame. The carriage has a steady traverse movement forward and backward. The carriage also has a horizontal motion, to or from the grinding wheel, so as to give great wearing accommodation to the wheel, the horizontal movement being adjusted by a hand wheel and weighted lever shown in front of the machine.

"The mandrel is of the best cast steel, running in self oiling boxes, lined with the best genuine Babbitt Metal. The emery wheel is of the very best make, and specially adapted for the use of this machine. The clamp or jaws which hold the knife on the carriage can be thrown clear back so as to allow a very neat and quick arrangement for setting the knife in the jaws.

The movement of the Carriage is very even and perfect, and the reversing apparatus is entirely noiseless and without jar, and has a very easy and steady traverse motion to it.

We offer this as the most perfect Automatic Grinding Machine yet introduced, and claim for it advantages and conveniences



NEW AUTOMATIC KNIFE-GRINDING MACHINE.

be used much longer without regrinding than if ground straight. Parties using this say it proves quite a saving to them, and the work produced by their planers is much finer and the time required for whetting up their knives much less. The object of this machine is that it will improve the running of planers by keeping the knives and the cylinders in perfect balance and making what has always been considerable of a job by most factories, simple, quick and more perfect than the old way. The great advantage of making this perfectly automatic is to enable the operator of the machine to have one set of knives always ground while the planer is in motion. For any further information in regard to the capacity and construction of the grinder we refer our readers to the following quotation from the company's catalogue:

"The machine can be set so as to grind any depth of cut wanted, and will take care of itself when once set. The grinding of this machine is what all mill men want; slightly concave, thus enabling the operator to whet up the knives twice as often before regrinding as with the old plan. The frame is cast all in one piece, and has a good floor base which does not take up much room, and it is entirely self-contained, as the counter shaft and the driving works of the carriage

possessed by no other machine made, and it will fill a want among all classes of mill men, who use planers." The Egan Co., 228 to 248 West Front street, Cincinnati, Ohio.

MR. E. W. VAN DUSEN, of 110 East Second street, Cincinnati, Ohio, has had over 40 years' experience in the care and management of steam boilers. During this two-fifths of a century he has tried many of the various boiler-cleaning compounds, but found each one lacking in some essential particular. After all these years' testing and study, he at last discovered—about one year ago—the compound which now bears his name; and, as its efficacy is thought to be perfect, he now offers it to the public as the long-looked-for remedial agent for scale in boilers. He guarantees it to do as he represents, or he will refund the money. It is cheap, only ten cents per pound, is a powder soluble in water, and contains five ingredients, each of which is claimed to be perfectly harmless to the iron or steel of which the boiler is made. It is in two forms: No. 1 compound for those steam boilers which already have an accumulation of scale; and No. 2, which is intended to use in new or clean boilers. The first removes all the old scale, the second prevents the formation of new, and neither injures the boiler. It is put up in five-pound packages, 8 of which are put into a single case and 16 in a double one.

Southern Farm Lands.

For the BALTIMORE MANUFACTURERS' RECORD.

While the MANUFACTURERS' RECORD is strictly devoted to industrial interests, in which it is doing a noble work, and has done much good in disseminating a knowledge of Southern progress, we have seen nothing in its bright columns in regard to Southern farm lands, and presume a short article on that subject would interest a large number of your readers.

Agriculture is, after all, the mother of all real prosperity, and is the nation's strength and stay, both in peace and war. It drives the wheels of every industry, nerves the arm of the artisan, supplies comfort to the hovel, as well as the palace, and dots the oceans with the white wings of commerce. Our government and law-makers do well, therefore, to foster agriculture in all its multifarious and essential departments.

In speaking of Southern farm lands, we shall go but little beyond personal knowledge and observation; but, a nativity and almost uninterrupted residence for nearly sixty years

productive. When fresh or liberally supplied with plant food, crops are sure and generous. One year with another, the sandy land farms excel both the river and prairie lands. These sandy soils are free, porous, active, of easy tilth, and produce every variety of crops—corn, cotton, oats, wheat, rye, barley, peas, potatoes, ground peas, sorghum, ribbon cane and fruits of every variety. These crops, of course do not come up to the yield of the rich and highly-manured lands of the West and East, where farming is more of a science than with us, and the ability and facility for fertilizing far exceeds those of the South. But, to tell you the truth, with the same system and the application of the same amount of fertilizers, we doubt very much whether the East or the West could equal our sandy lands, taken as a whole, excepting corn and small grain. We can begin to plant some crops in January, and continuously on until January—our winters being so mild. Yet no reader must suppose that we never have cold weather, or that our summers are excessively hot. This year, taking the whole State, our temperature has averaged 95°, while in New York, Pennsylvania and other States, people have been prostrated with heat.

Another line drawn east and west from about Greenville, along the southern boundaries of Loudes, Dallas and Mavengo, to opposite Meridian, Miss., cuts off what are called the "Wire-Grass" or Southern pine lands, which extend to the Gulf. This is almost wholly a sandy region, somewhat coarser and deeper than the northern tier of counties, but along the various creeks and branches we find rich and alluvial lands, which equal any other in productiveness. The pine lands, however, are mostly adapted to small farms.

Between these two lines, and extending almost entirely across the State, we have the famous "Black Belt," so termed for two reasons: the soil consists mostly of rich prairie and hammock lands, unequalled for productiveness for certain crops—mostly corn and cotton; and secondly, because in these 10 or 12 counties live a vast colored population, who, before the war, made this region almost equal to that of the famed lands of Kentucky, Ohio, Illinois and other rich States. Since the war, for lack of proper culture and care, most of these lands have "run to waste." It would be useless to assign reasons for this state of facts, because many of your readers, though Southern in birth, could not fully appreciate them. But there is a future for these rich lands, when immigration and a more rational system of culture settle down upon them.

There is yet a class of farm lands which have not been alluded to—the river and creek bottoms. The rivers are the Tennessee on the north, whose lands are largely intermixed with lime, as are our prairie lands, and are very productive for corn, wheat, oats, clover and other grasses. The Alabama, formed by the Coosa and Tallapoosa, just above Montgomery, flows nearly through the center of the State, and the lands are more sandy, but of a finer texture than the hill and table lands, and are remarkably productive, especially for corn and cotton. The same may be said of the lands along the Bigbee and the Warrior, along all of which are found large and fertile farms, and sometimes the prairie and hammock lands jutting up to the very margins. So with the creek lands, and often you find large, level fields widening and then curving into little coves and valleys, which are very productive and pleasant to cultivate.

But we must close, promising at some future time, if agreeable, to give a chapter on Southern farm culture, which, in many instances, it would be difficult to avoid burlesque, rather than state what to many of us are humiliating facts. Wishing the MANUFACTURERS' RECORD unbounded success and the dawning of a grander agricultural and manufacturing future for dear old Alabama, for both of which she is specially adapted, we bid you good night.

TUSKALOOSA, ALA., Sept. 25, 1884.

on Alabama soil, enables us to speak with more certainty than he who gives wing to a fervid imagination.

A line drawn almost east and west from Troy or Eufaula in the east, via Montgomery, Selma, Marion, Greensboro, Eutaw, thence a little north of west, separates a vast area from what is known as the "Black Belt," and embraces the now eagerly sought mineral region and the hill country of Alabama. It would make this paper too long to speak of the coal, the iron ore, the timber and water-power of this now-famous region of our State; nor can we speak specially of our modes of cultivation, which are as yet somewhat primitive in many instances.

North of the above indicated line are two classes of farm lands: The red loam or table lands, which are preferable even to the black prairie in some respects, and the grey sandy soil, which is very porous, and being of coarser sand, unless fed by manures, are short-lived as to fertility and productiveness. With a liberal and judicious supply of plant food this kind of soil, when lying well, is very desirable and gives satisfactory returns. Most of this character of soil is rolling or hilly, but when found in level bodies is durable and very valuable. The red table lands have a firmer texture, with a deep red or brown clay subsoil, and are very durable and

and, despite the bold assertion oft repeated on both sides that bottom has been reached and that at anything less the works will be closed, nevertheless some one will be found to go a little lower yet.

Barb fencing is jobbing in small lots.

General trade is good considering the season and general condition of affairs in the country at large. We quote from store as follows:

Bar Iron	1 80	@1 90
No. 27 Sheet	3 15	@3 25
Galvanized Sheet, Best	50	
Crescent Steel	11	@12
Flow steel slabs	2 3/4	
Galvanized Iowa Barb Wire	5 50	@5 75
Burden Shoes	4 00	@4 10
Junata Shoes	3 70	@3 75
Carriage Bolts	75	
Steel Nails	2 40	@2 50
Iron Nails	2 30	@2 40
Sisal Rope	8 1/4	
Screws, 70 and 55, with concessions to large or wholesale buyers.		

St. Louis Iron Market.

Specially reported by HOFFER & Co., Pig Iron and Iron Ore, No. 318 Olive Street.

ST. LOUIS, Sept. 29, 1884.

Trade for past week dull with value declining. We quote nominally as follows:

HOT-BLAST CHARCOAL.

Missouri	\$16 00	@17 00
Southern	16 00	@17 00
Ohio	20 00	@22 00

COKE AND COAL.

Missouri	16 00	@17 00
Southern	16 00	@17 00
Ohio	20 00	@22 00

MILL IRONS.

Red Short	15 50	@16 00
Neutral	15 00	@16 00

CAR-WHEEL AND MALLEABLE IRON.

Missouri	18 00	@20 00
Southern	23 00	@27 00
Ohio	23 00	@30 00
Iron, par.		

METALS.

TIN PLATES.

BLOCK TIN.

"Lamb and Flag," and "Straits."

Large Pigs	20
Small Pigs	21
BARS	25

TINNERS' SOLDER.

No. 1 Refined	13
Market Half-and-Half	15
Strictly Half-and-Half	16

ROOFING PLATS.

IC, 14X20, Choice Charcoal Terne	5 75
IX, 14X20, " "	7 50
IC, 20X28, " "	11 50
IX, 20X28, " "	15 00
IC, 20X28, Extra fine quality, charcoal roofing, genuine "old style" redipped.	15 75
IX, 20X28, " "	19 75

TIN PLATES.

IC, 10X14, Charcoal	6 50
IX, 10X14, " "	8 50
IC, 12X18, " "	6 75
IX, 12X18, " "	8 75
IC, 14X20, " "	6 50
IX, 14X20, " "	8 50
IC, 14X20, " "	10 50
IX, 14X20, " "	12 50
IC, 14X20, " "	14 50
IX, 14X20, " "	16 00
IC, 100, Plate	6 25
IX, 100, " "	8 25
IC, 100, " "	10 25
IX, 100, " "	12 25

COKE PLATES.

IC, 10X14, bright, "B. V." grade	5 25
IX, 14X20, " "	5 25
IX, 14X20, " "	7 25
IX, 10X20, Gutters	9 25

SHEET ZINC.

In casks of 600 lbs., 1/4 lb.	6
In smaller quantities, 1/4 lb.	7

BABBITT METAL.

A 1, Ordinary	15
Antimony	0
Excelsior Babbitt Metal, No. 2	10
" " " "	9

LEAD.

Pig	4
Bar, (15 oz. bars)	6 1/4
Sheet	7 1/4
Pipe, full coils	6 3/4

COPPER.

Tinned Sheathing, 14X48, 14, 16, 18 oz.	25
" " Planish'd, 14X48, 14, 16 oz.	35
" " Boilers 7, 8, 9.	37
Cooper Pit Bottoms	25
Tinning Extra	15
Brazier's Copper, 15 to 100 lb.	26
" " 10 to 12 lb.	28
" " 8 lb.	30
" " 6 lb.	32
Bolt	25
Tinning extra	40

PAINTS, OILS, &c.

PAINTS.

Black Lamp, coach painters	1/4 lb 20c
Black Lamp, ordinary	1/4 lb 6c
Black Ivory Drop, fair	12@15c
Black Ivory Drop, best	23c
Black Paint, in oil	kegs, 6c; assorted cans, 9c
Blue Prussian, fair to best	40@55c
Blue Prussian, fair to best, in oil	45@55c
Blue Chinese, dry	70c
Blue Ultramarine	15@25c
Brown, Spanish	1c
Brown, Van Dycke	5@15c
Green, chrome	8@15c
Green, chrome, in oil	9@12@15c
Green, Paris	good, 20c; best, 25c
Green, Paris, in oil	good, 20c; best, 25c
Iron Paint, bright red	1/4 lb 2 1/2c
Iron Paint, brown	1/4 lb 1 1/2c
Iron Paint, purple	1/4 lb 3c
Iron Paint, ground in oil, bright red	1/4 lb 5 1/2c
Iron Paint, ground in oil, red	1/4 lb 5c
Iron Paint, ground in oil, brown	1/4 lb 4 1/2c
Iron Paint, ground in oil, purple	1/4 lb 6c
Linseed Oil, raw	59c
Single Boiled	61c
Double	63c
Mineral Paints	2@4c
Orange Mineral	10c
Red Lead, American	6 1/2@7c
Red Venetian, (English) dry	\$1.50 to \$1.75
Red Venetian, in oil	assorted cans, 9c; kegs, 6c
Red Indian, dry	9@12c
Rose Pink	10@13c
Sienna, American, raw	4c
Sienna, burnt	4 1/2c
Sienna, burnt, in oil	8@15c
Sienna, raw	8@15c
Umber, burnt	4@8c
Umber, burnt, in oil	8@15c
Umber, raw, in oil	3 1/2@7 1/2c
Vermilion, Chinese	8@15c
Vermilion, English	50@55c
Vermilion, American, common	15c
White Lead, American, pure dry	6@6 1/2c
White Lead, American, pure in oil	6@6 1/2c
White, Paris, English, prime	in bls. 1 1/2@2c
Yellow Ochre, French	\$1.75
Yellow Ochre, French, in oil	ass't'd cans, 9c; kegs, 6c
Yellow Ochre, American	in bls., 1 1/2@1 3/4c
Yellow Chrome	8@18c
Yellow Chrome, in oil	9@12@18c
Zinc White, American, No. 1, dry	5@6c
Zinc White, American, No. 1, in oil	9c
Zinc White, French (Paris) dry	9@12c
Zinc White, French in oil	10@14c

OILS.

Bleached W. Sperm oil	1 05@1 08
Nat. "	1 02@1 05
B. W. Elephant oil	75@
" Whale oil	70@ 72
Prime Lard oil	65@ 67
Extra No. 1 Lard oil	63@
Lubricating oils	12@ 25
Miners' oil	50@ 55
W. Pressed Fish oil	42@
Neatsfoot oil	65@ 80
Steam-refined Cylinder oil	40@ 55
Best Filtered	65@
Signal oil	60@ 70
Paraffine	13@ 20

SUNDRIES.

Benzine	1 gal., 8@10c
Turpentine	1 gal., 3 1/2@ 3 3/4c
Chalk	3/4c
Chalk, block	3/4c
Dryer patent Am'n.	ass't'd cans, 9c; keg, 7c
Frostings	40c
Glue, white	20@36c
Glue, sheet	14@20c
Glue, ordinary	9@12
Glaziers' Points, zinc	8c
Gum, Copal	36c
Gum, Damar	25c

BRASS.

ROLL AND SHEET BRASS.

Brown & Sharpe's Gauge the Standard.

New List, Jan. 17, 1884.

Dis 10@20 %

COMMON HIGH BRASS.

Wider than (2 10 12 14 16 18 and including.)	10	12	14	16	18	20
To No. 20, inclusive	.21	.22	.23	.25	.27	.29
Nos. 21, 22, 23 and 24	.22	.23	.24	.26	.28	.30
Nos. 25 and 26	.22 1/2	.23 1/2	.24 1/2	.27	.29	.31
Nos. 27 and 28	.23	.24	.25	.28	.30	.32
Add 9 cts. 1/4 lb. for sheets cut to particular widths and lengths.						
Add 1/2 c. 1/4 lb. additional on each number thinner than Nos. 28 to 38 inclusive.						
Brass thinner than No. 38 is Platers' Brass.						
Printers' rules	55 cts.					
Printers' Sheets and Plates cut to particular sizes and lengths to No. 20, inclusive	30 cts.					
Brazing, Spinning and Spring Brass, one cent more than common High Brass.						
Low Brass four cts. 1/4 lb. more than common High Brass.						
Gilding, Oreide and Bronze seven cts. 1/4 lb. more than common High Brass.						

SLITTING METAL.

Add to list as follows:

Over 1/2 in. to 2 in., inclusive, Nos. 12 to 20, inclusive	1/2c.
Over 1/4 in. to 1/2 in., inclusive, Nos. 12 to 20, inclusive	1
1/4 in. and narrower, not less than	1
Over 1/2 in. to 2 in., inclusive, Nos. 21 to 28, inclusive	4
Over 1/4 in. to 1/2 in., inclusive, Nos. 21 to 28, inclusive	2
1/4 in. and narrower, Nos. 21 to 28, inclusive, not less than	6
Over 1/2 in. to 2 in., inclusive, Nos. 29 to 32, inclusive	1 1/2
Over 1/4 in. to 1/2 in., inclusive, Nos. 29 to 32, inclusive	3
1/4 in. and narrower, Nos. 29 to 32, inclusive, not less than	12
Over 1/2 in. to 2 in., inclusive, No. 33 and thinner	3
Over 1/4 in. to 1/2 in., inclusive, No. 33 and thinner	6

1/4 in. and narrower, No. 33 and thinner, not less than 18
Slit Metal cut to particular lengths, 1/4 lb. additional.
PLATERS' OR GOLD METAL.

In bars 40c.
In ingots 43c.
In ingots, planed or polished 46c.

BRASS TUBING.

Brown & Sharpe's Gauge the Standard for all Tubing.

Plain, to No. 20, inclusive 35

Above 5-16 inch to 3 inches, inclusive 45

Plain, to No. 21, above 3 inches 45

5-16 inch to No. 20 45

1/4 inch 60

3-16 inch 1.00

1/2 inch 1.50

Bronze Tubing 3 cents per pound more than Brass.

Nos. 21, 22, 23, two cents advance on list for each number.

Nos. 24, 25, 26, four cents advance on list for each number.

Above No. 26, special rates.

All Mandrel-drawn Tubes, 3/4 inch and above, five cents advance on list prices.

All Mandrel-drawn Tubes under 3/4 inch, twenty-five cents per pound advance on list prices.

Fancy Tubing to No. 20 40-43

English, Scotch and Extra Pattern Fancy Tubing to No. 20 48

Tubing sawed or cut, 2 to 4 feet long, one cent advance on list.

Add to one cent one-half cent for each additional cutting under two feet.

WIRE IN COILS.

Old English gauge the Standard.

	Common High Brass.	Low Brass.	Gilding, Bronze and Copper.
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All Nos. to No. 16, inclusive 22 \$.26 \$.30

Nos. 17 and 18 23 27 31

19 and 20 24 28 32

21 25 29 33

22 26 30 34

23 27 31 35

24 28 32 36

25 29 33 37

26 30 34 38

27 31 35 39

28 32 36 40

29 33 37 41

30 34 38 42

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A GENTLEMAN who is an expert in the opening and developing of marble and stone quarries, is looking for an opening in the South. Address Harvey, care **MANUFACTURERS' RECORD**.

WANTED.—A position as Agent and Superintendent of a Woolen or Worsted Mill, by an English manufacturer of large experience in finest grades of all styles of Men's wear. Would undertake the sale of the product if necessary. Highest testimonials.—Address XY, care **MANUFACTURERS' RECORD**.

WATER POWER TO GIVE AWAY.—A good chance for capitalists on Saluda river, S. C.; has twelve feet natural fall; easily improved; desirable for investments; two miles from Williamston; Three miles from Pelzer mills. Address J. R. Wilson, Williamston, Anderson Co., S. C.

FOR SALE.—A Tin, Galvanized-Iron Cornice, Gas and Plumbing Establishment in one of the largest and most prosperous inland cities in the South. A splendid opportunity. Special reasons. For particulars address S. B. Lowe, Chattanooga, Tenn.

WANTED.—A good location for a saw and planing mill, where timber—poplar, pine and oak—is plenty and stumpage can be had. Address P. Master, Kenton, Obian county, Tenn.

WANTED.—Having just patented a new and useful tool, would like to make arrangements with some hardware manufacturer to make them either on royalty or will sell shoprights. Address T. A. P., Box 13, Plymouth, N. C.

SPLENDID barrel flouring mill and elevator in Tennessee for sale. On track and river. In perfect order and full operation. For particulars, apply to Meriwether & Gilmer, Clarksville, Tenn.

FOR SALE.—A cotton mill situated on the line of the Illinois Central Railroad, near the city of Canton, Miss., in a splendid cotton region, good water supply, cheap fuel, labor abundant. The factory would be equally adapted to ginning on a large scale, by improved methods, and cotton-seed-oil mill combined. The property consists of 28½ acres land, lying along the railroad; factory building 100 yards from the railroad, in the centre of the tract, substantially built brick, 200x90 feet; contains one English engine 200 horse, two English lappers, shafting and pulleys. There is a double dwelling-house on the property. Bigsby & Edmonds, Baltimore, Md.

COTTON MILL FOR SALE.—A North Carolina cotton mill, with or without machinery. Well adapted and located for cotton or woolen manufacturing, hosiery, underclothing, rice milling, &c. A great bargain is offered. Satisfactory reasons for selling. Address Bigsby & Edmonds, Baltimore.

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MICA.—Party with some capital wanted to mine Mica deposits in Virginia. Address Pick, care of **MANUFACTURERS' RECORD**.

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MINING ENGINEER desires engagement as manager or superintendent. Makes assays. Late superintendent large copper mine in North Carolina. Best of references. Address Clarence M. Buel, M. E., 275 18th street, Brooklyn, N. Y.

YARN FACTORY FOR SALE.—Stocked with latest improved machinery, and having an established trade in rope, twines, &c. A magnificent opportunity for investment. Bigsby & Edmonds, Baltimore, Md.

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Young man practically experienced in managing foundry, machine and wood shops, who has made handling help and economical production a study, is open to engagement as superintendent or as working partner in business requiring little capital. References given and required. Address E. L. Ross, Indian Orchard, Springfield, Mass.

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- 2, 4-Horse Power Engines,
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- 4, 12-Horse Power Engines,
- 3, 15-Horse Power Engines,
- 2, 18-Horse Power Engines,
- 3, 20-Horse Power Engines,
- 3, 25-Horse Power Engines,
- 1, 30-Horse Power Engine,
- 1, 35-Horse Power Engine,
- 1, 40-Horse Power Engine,
- 2 Steam Pumps, 1¼ inch suction, and 1 inch discharge.
- 3 Pipe Machines.
- 100 Wrought rim pulleys.

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REMEDY SMOKING & "Blowing" BURNERS.
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One Drag Saw, for cutting logs into length suitable for handles or spokes.

One Bull or Centre Saw, with improved adjustable heads, for ripping any large or medium size timber into handle staves.

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Two Automatic Swing Lathes, for axe, mattock, coal pick, or any other oval, flat, straight or bent handles. Capacity, 25 to 30 dozen axe; or 35 to 40 dozen sledge handles.

One Spoke Lathe, for spokes, or sledge, mattock, or hammer handle. Capacity, 25 to 30 dozen.

One Gauge Lathe, for any kind of round turning.—Broom handles, augur handles, plow and chair rounds, &c., &c. Capacity, 100 dozen augur handles.

One combined Throater and Trimmer, for handles.

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One Spoke Throater.

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One hundred feet of Shafting with couplings complete.

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One Lot of Patterns, consisting of straight axe, bent axe, railroad pick, coal pick, mattock sledge, hatchet, hammer, adz, spokes, augur, broom handles, &c., &c. Probably 60 and 75 different styles and sizes.

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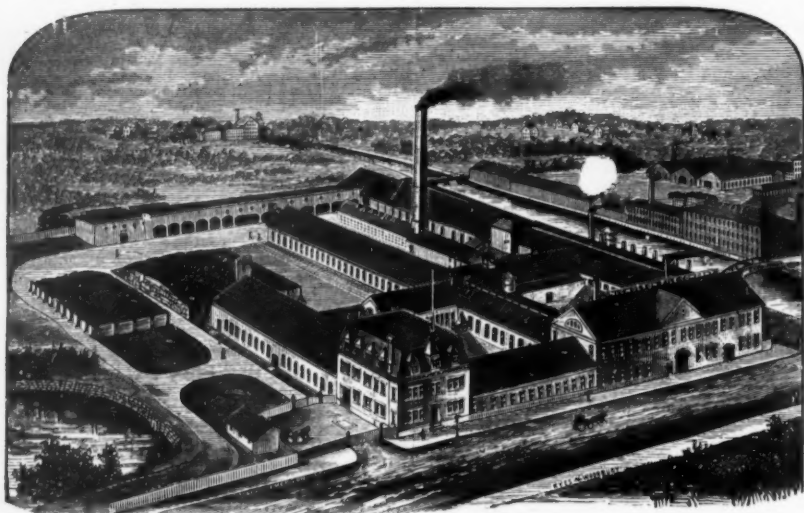
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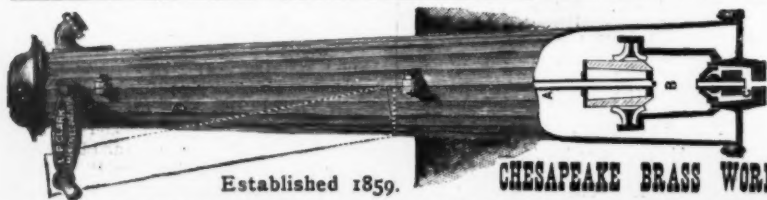
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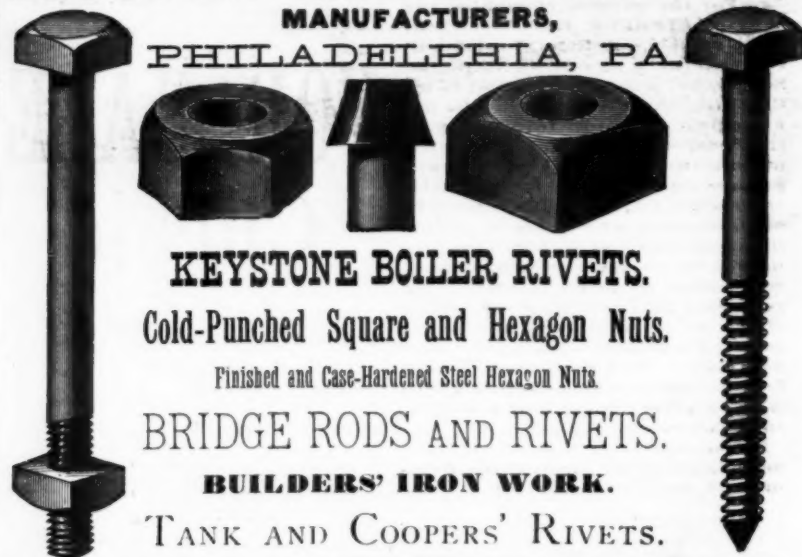


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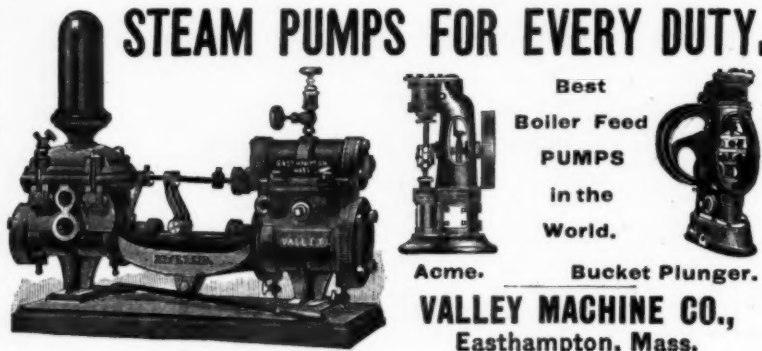
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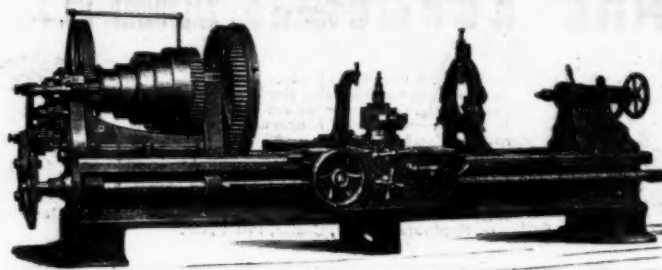
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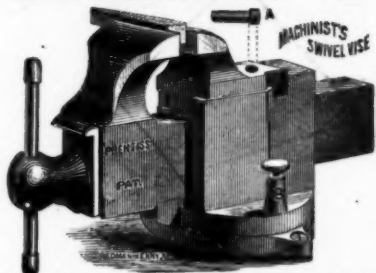
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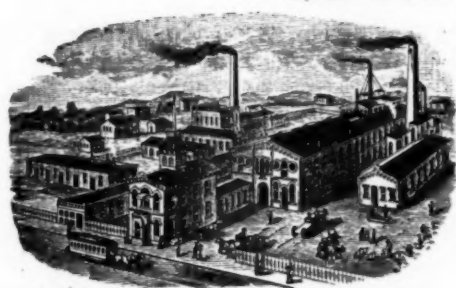
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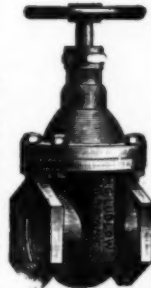
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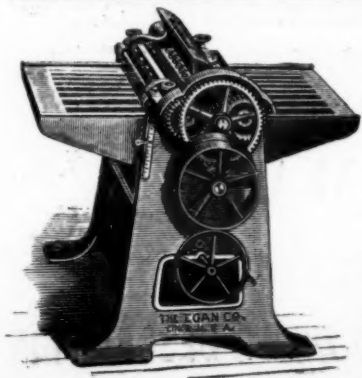
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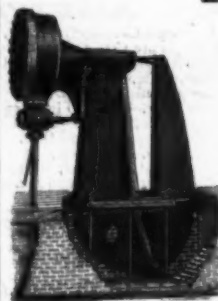
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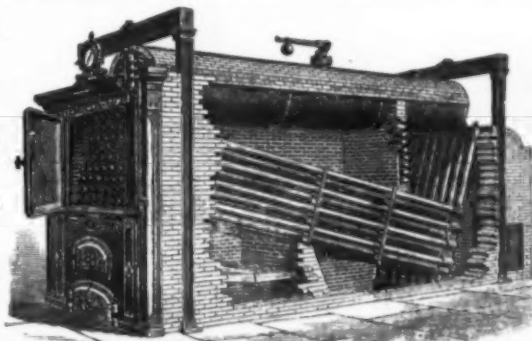
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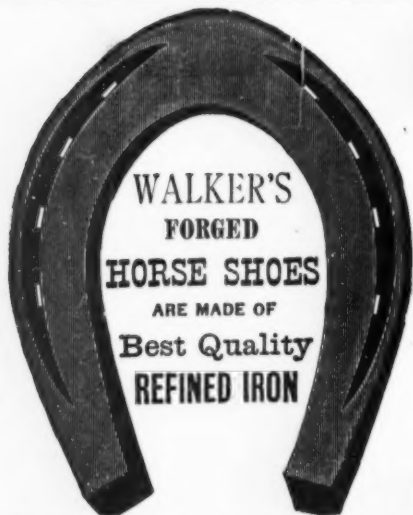
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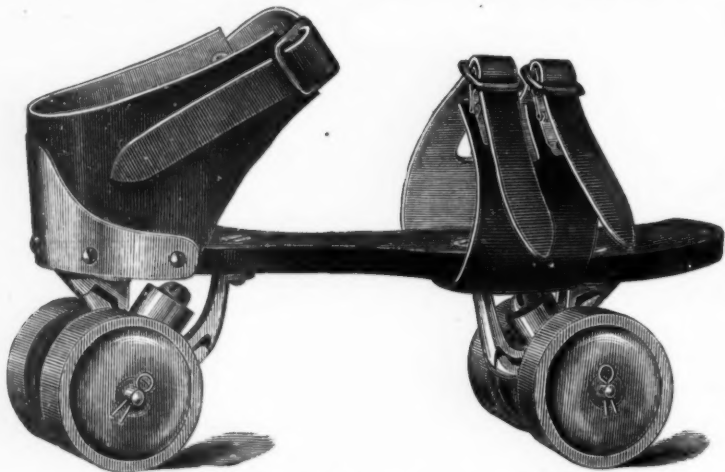
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Plate. dis 33 1/2 & 2 %	Hubbard, Bakewell & Co. Circular Saws. dis 40 & 5 %	SQUARES.	Japanned Barb Fence. No. 6, 1 lb., 6 c
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Bradford. List prices as revised	Hubbard, Bakewell & Co., One-Man's, X Cut	Iron. dis 50 %; full cases, dis 50 & 10 %	Buck Thorn Galvanized. No. 6, 1 lb., 6 c
Norwich. Dec. 6th, 60 & 2 %	Hubbard, Bakewell & Co., Mill Saws. dis 40 & 5 %	Nickel Plated. add \$2.50 & \$4 per doz net.	Picture Wire. dis 40 %
P. & F. Corbin. for cash.	Peace Circular and Mill. dis 25 %	Try Square and T Bevels. dis 50 & 10 %	Clothes Line Wire, Galvanized. \$3.00 per doz
Russell & Erwin. dis 45 %	Peace Hand, Panel and Rip. dis 25 %	Disston's Try Square and T Bevels. dis 40 %	Wire Cloth, green, drab and black. per sq ft 2 c net
Malloy, Wheeler & Co. and 2% for cash.	Peace Cross Cuts. dis 35 %	TACKS, BRADS, &c.	
Padlock—Russell & Erwin.	Peace Hand Saws, all widths. dis 10 %	New List, Sept. 1, 1882.	
Wm. Wilcox & Co. dis 45 %	Webster Cross Cut, with handles. dis 25 & 10 %	Tinned Swedes Tacks. dis 30 %	
Wm. Wilcox & Co.'s Plate Locks. dis 33 1/2 %	Griffin's Hack Saws and Blades. dis 30 %	Tinned American Tacks. dis 30 %	
Yale Lock Manf. Co.'s "Standard". dis 40 %	White. per doz \$1.05, dis 10 %	Swedes Tacks, all kinds. dis 30 %	
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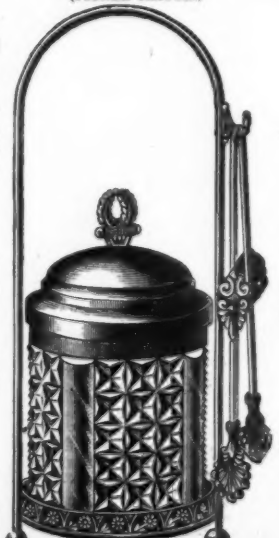
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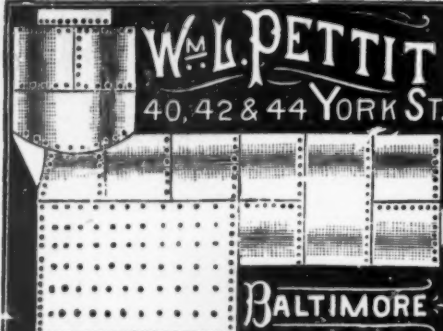
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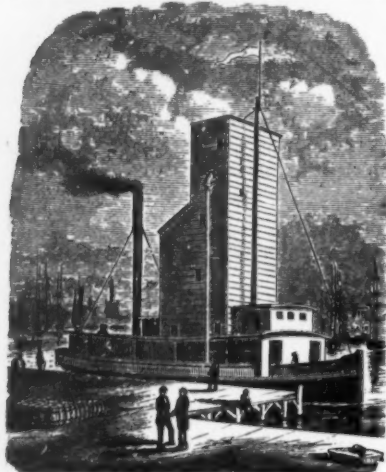
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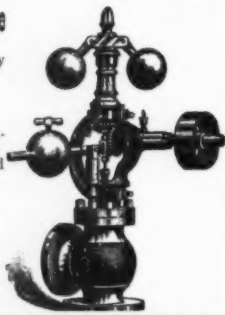
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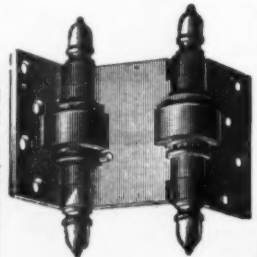
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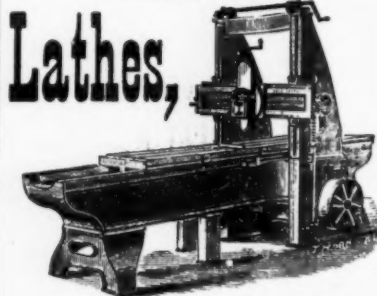
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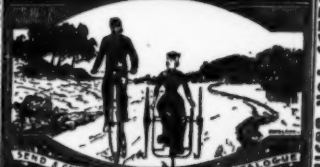
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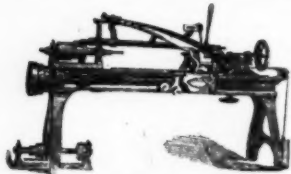
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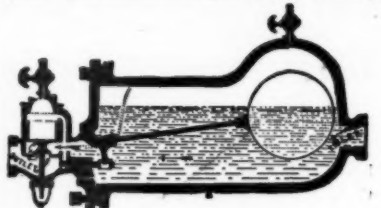
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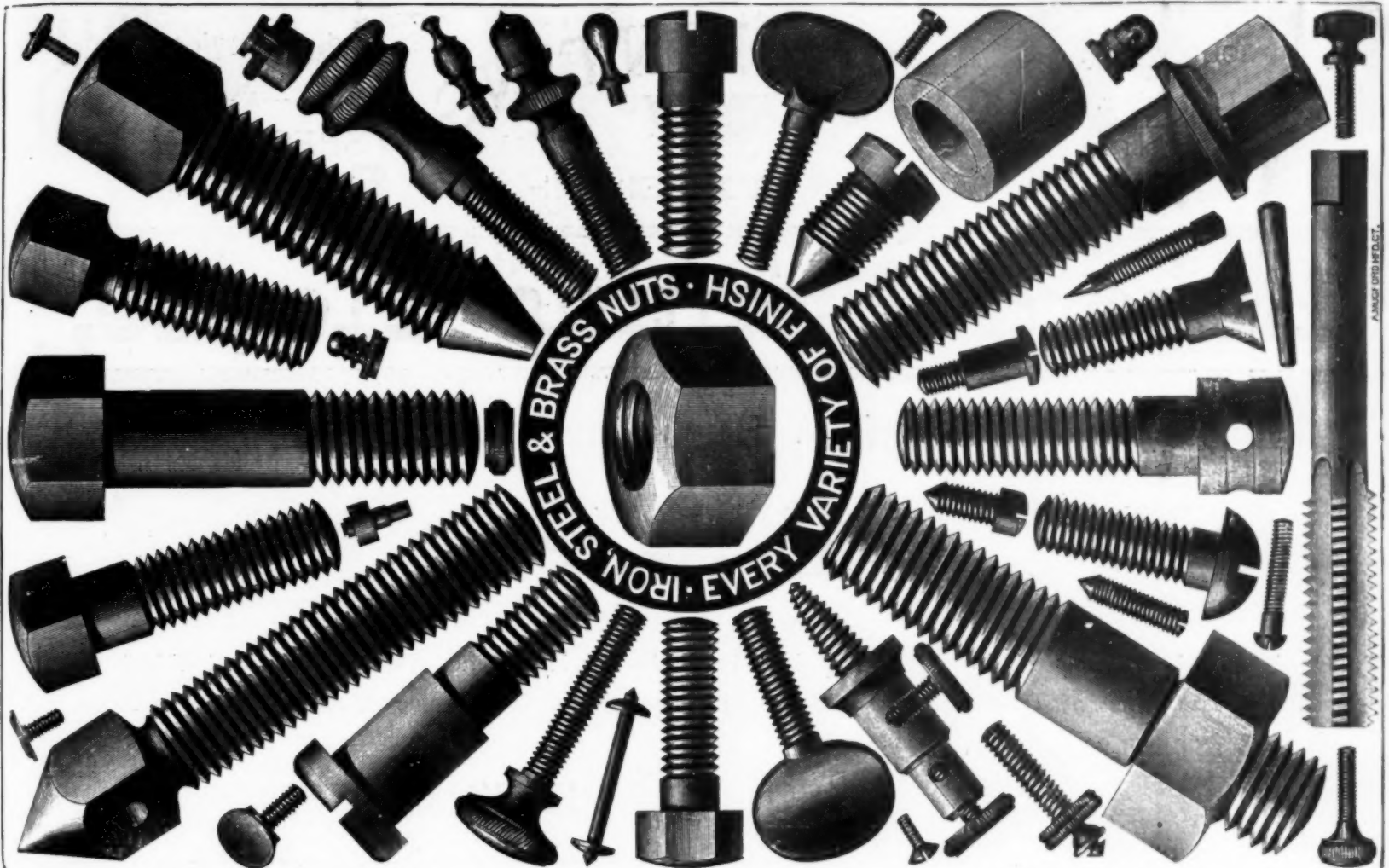
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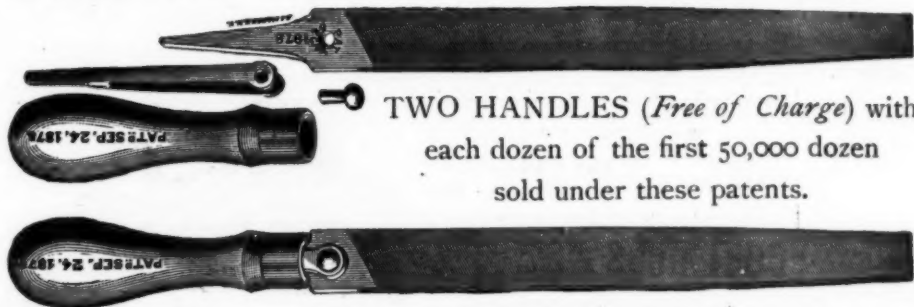
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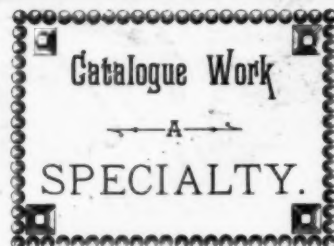
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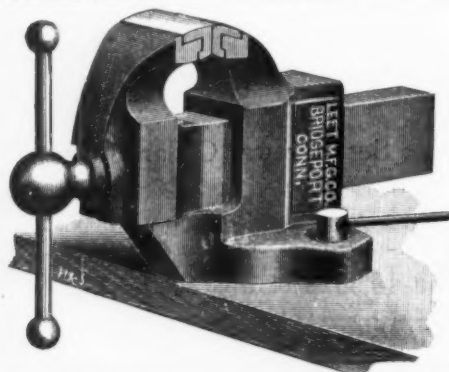


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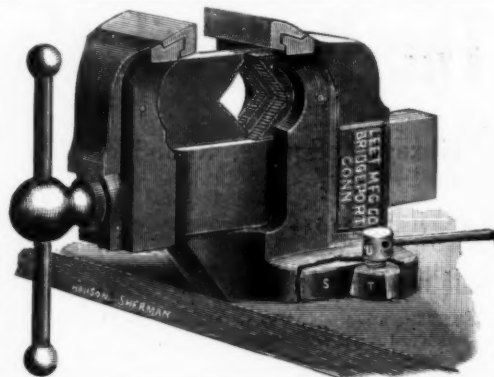


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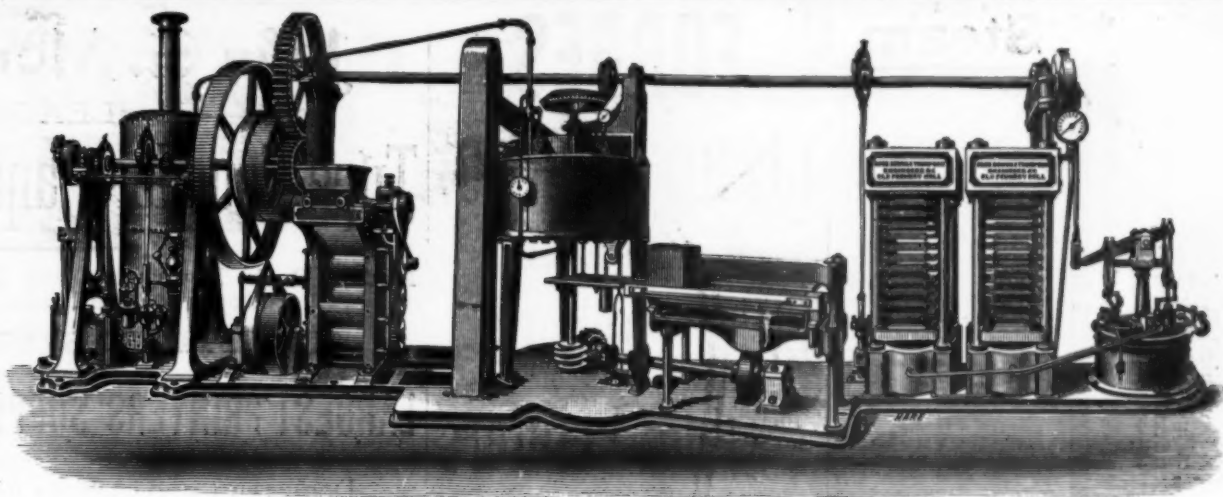
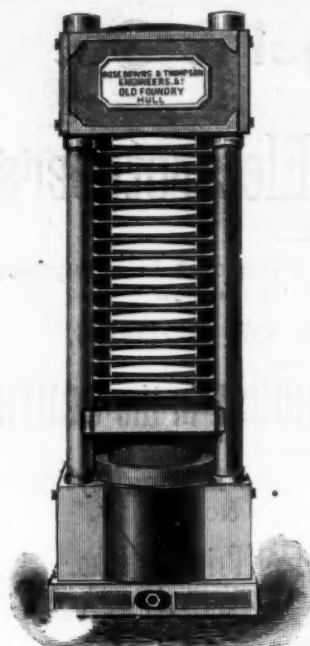
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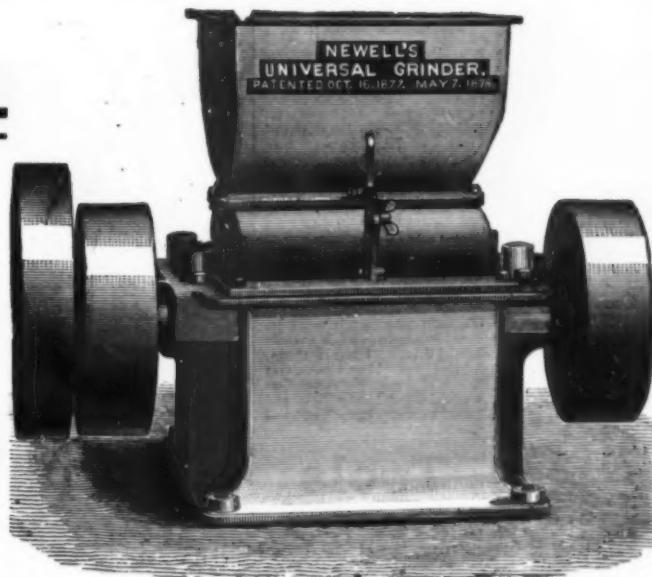
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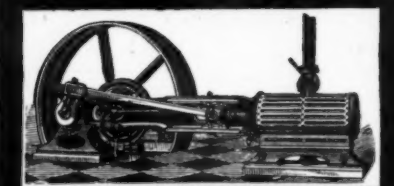
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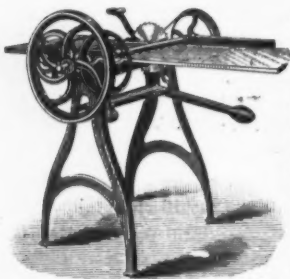
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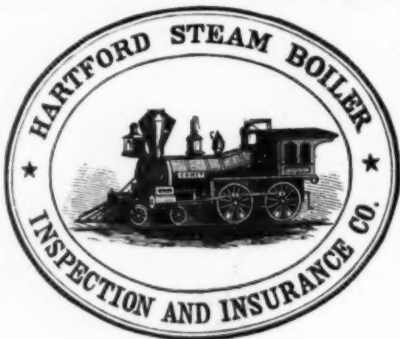
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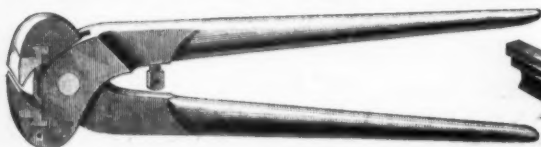
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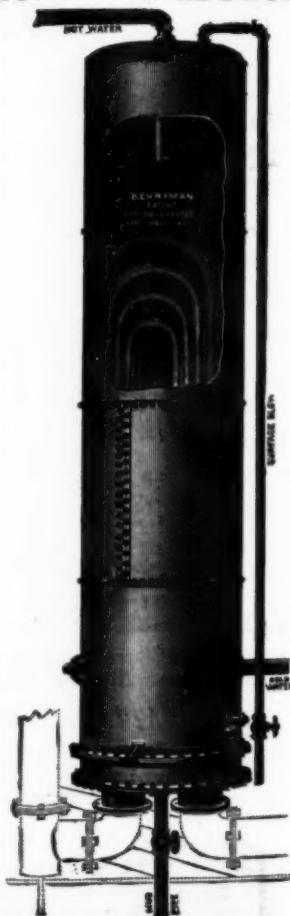
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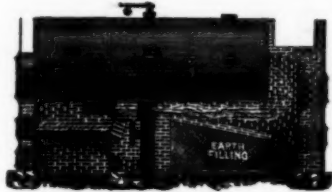
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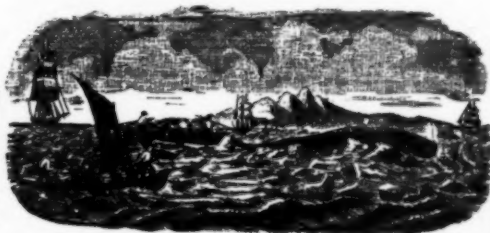
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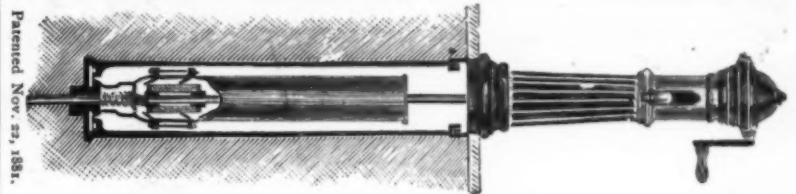
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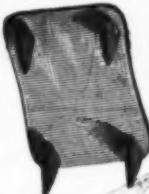
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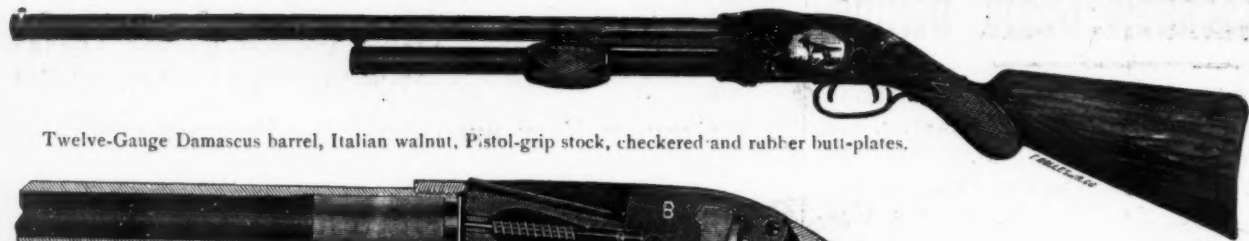
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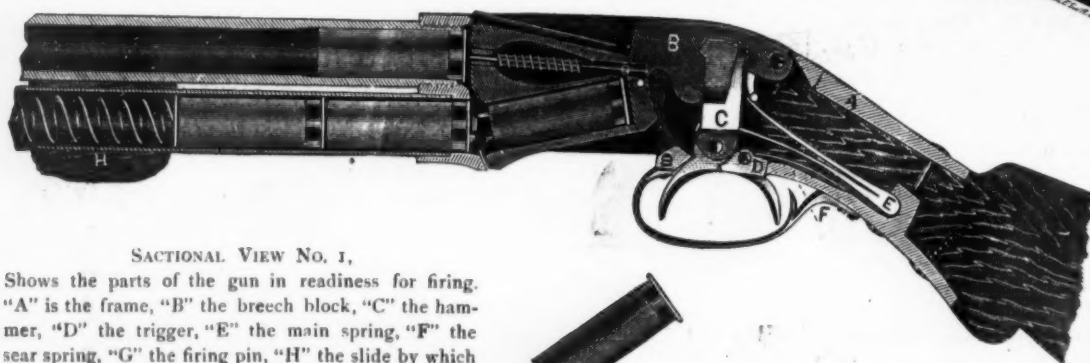


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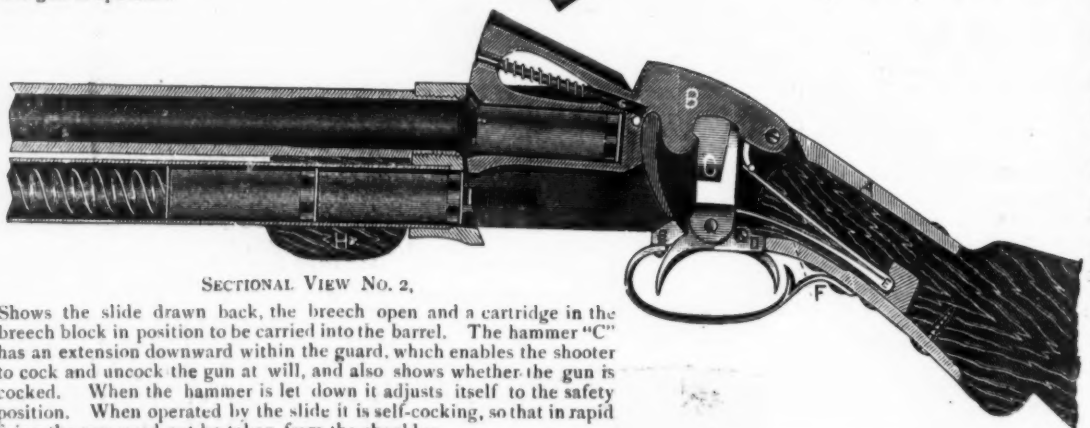
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SECTIONAL VIEW NO. 2,
Shows the slide drawn back, the breech open and a cartridge in the breech block in position to be carried into the barrel. The hammer "C" has an extension downward within the guard, which enables the shooter to cock and uncock the gun at will, and also shows whether the gun is cocked. When the hammer is let down it adjusts itself to the safety position. When operated by the slide it is self-cocking, so that in rapid firing the gun need not be taken from the shoulder.

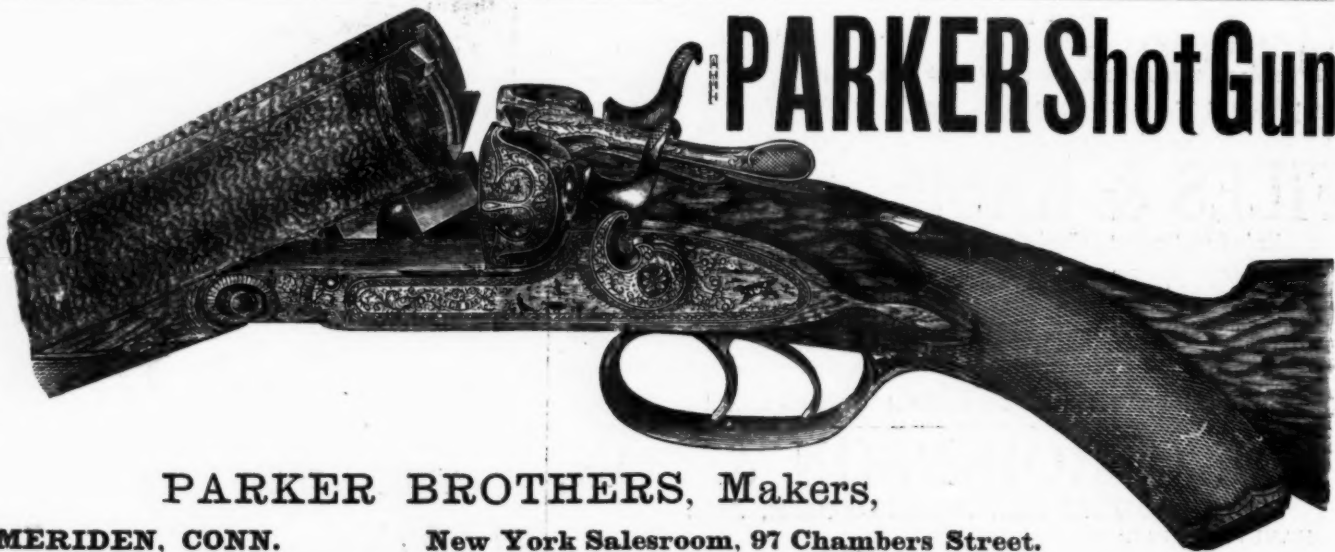
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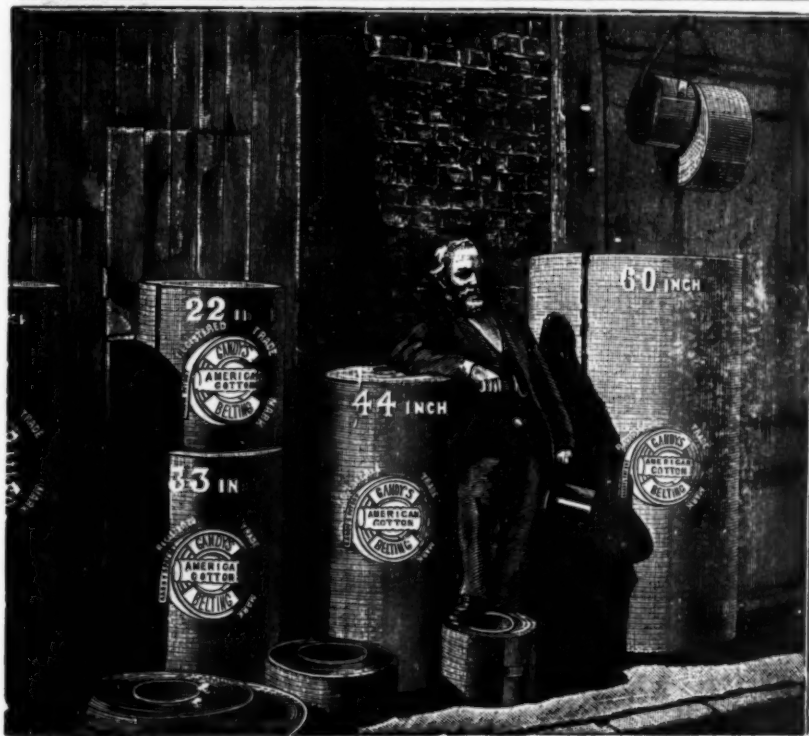
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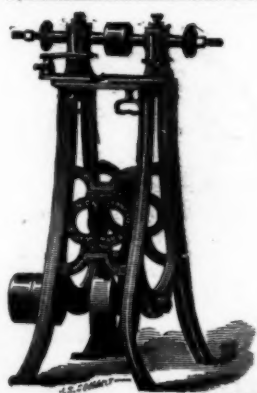
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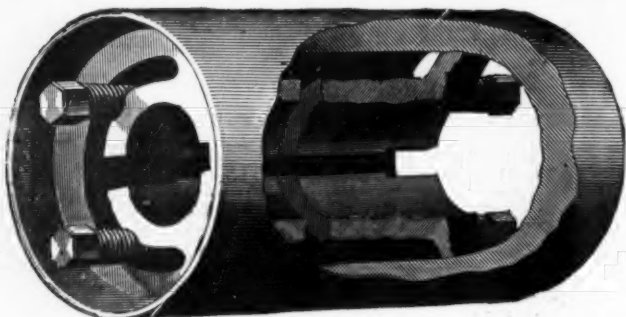
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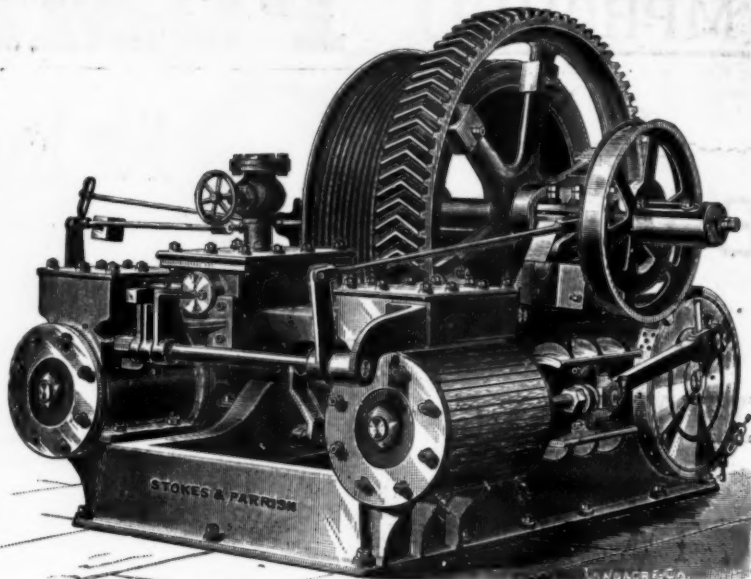
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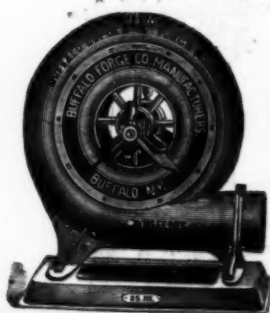
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